

STIC Search Report Biotech-Chem Library

STIC Database Tracking Number: 206082

TO: Celine Qian

Location: REM/3D21/2C70

Art Unit: 1636

Thursday, November 02, 2006 Case Serial Number: 10/702319 From: Dwayne Hill

Location: Biotech-Chem Library

REM-1A41

Phone: (571)272-8972

Dwayne.Hill@uspto.gov

Search Notes

Examiner Qian,

See attached results.

If you have any questions about this search feel free to contact me at any time.

Thank you for using STIC search services!

Dwayne Hill STIC Biotech/Chem Library (571)272-8972



THS PACE LEFT BLANK

10-1308 ACCESS DB # 106082 PLEASE PRINT CLEARLY

FOR OFFICIAL USE ONLY

Scientific and Technical Information Center

SEARCH REQUEST FORM

Requester's Full Name: Celine Qiam Examiner #: 78710 Date: 1930/06
Art Unit: 1636 Phone Number: 2-0777 Serial Number: 107702,319
Location (Bldg/Room#): 3021 (Mailbox #): 22 70 Results Format Preferred (circle): PAPER DISK ************************************
To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:
Title of Invention: Compositions and Method, for the modification of gene express,
nventors (please provide full names): Derera, Ranjan et al.
Earliest Priority Date:
Search Topic: Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.
For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the ppropriate serial number.
Please search SEQ 10 NO: 113, also search
fragments of SEQIDNO: 1/3 (Nt 1019-1675, 1019-1643)
and a 20 mer search of SEQ IDNO: 113.
For both commercial 4 interference dutabase.
Thanks. (D. P) 1/3-3090 NA
Print 1/3-3
FA T
Los LLU

THS PACE LET BLANK

AR432752 Sequence AX070153 Sequence Continuation (4 of AC134081 Rattus no AC134084 Rattus no AC134084 Rattus no AC134907 Rattus no AC102975 Rattus no AC102975 Rattus no AC102975 Rattus no AC1122975 Rattus no AC1122976 Manuse DNA	AL671782 WOUSE DNA AL671782 WOUSE DNA AC124029 MUS muscu AC103653 MUS muscu AC103654 MUS muscu AC1036514 MUS muscu AC127793 Rattus no AC127793 Rattus no Continuation (194 Continuation (2 of AP003445 Oryza sat CT025599 MUS muscu AC161876 MUS muscu	linear PAT 17-AUG-2003	and Rubicon Forests.	0; Indels 0; Gaps 0; CaccaccrgTrcagTTGATTC 60
, , , , , , , , , , , , , , , , , , ,	39 1.3 192583 6 ALG713135 39 1.3 192583 6 ALG713135 39 1.3 204904 6 AC124029 39 1.3 207406 6 AC124029 39 1.3 212662 6 AC103663 39 1.3 233002 12 AC120490 39 1.3 3030285 6 AF125314 39 1.3 300361 12 AC127793 38 1.2 110000 12 AC117711 38 1.2 110000 12 AC114711 38 1.2 110011 12 AC114711 38 1.2 11011 12 AC114711 38 1.2 170810 12 CT025599 39 1.2 174149 6 AC161876	AR360987 Sequence 113 from patent US 6596925. AR360987.1 GI:33768497 Unknown. Unclassified. 1 (bases 1 to 3070) Perera,J.R. Bagleton,C. and Rice,S.J. Compositions and methods for the modification	656925-A 113 earch & Develt d.; Parnell; cation/Qualif; 3070 rganism="unkn ol_type="genon	Similarity 100.0%; Prod. No. 0; O; Conservative 0; Mismatches accaccarcaccaaaaaracaacaccarcaccaccaccac
1	Ი ᲘᲘ Ი ᲘᲘ ᲘᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡ	ZΣ	JOURNAL DO PERTURES SOURCE SOURCE ORIGIN	Dest Jonaton Watches 307 Qy Db Db Db Db Db Db Db Db Db D
Li 70	.actrogaacaaaaaaaa 3070 ues . 206339		cted by chance to have a soft the result being printed, score distribution. Description	00000000000000000000000000000000000000
GenCore version 5. Copyright (c) 1993 - 2006 Bi - nucleic search, using sw model November 1, 2006, 11:09:33; S (wit 1159 ore: 3070	table: OLIGO_NUC Gapop_60.0 , Gapext 60.0 Gapop_60.0 , Gapext 60.0 Gapop_60.0 , Gapext 60.0 E 3 20 The seq 1 20 The seq length: 0 DB seq length: 0 DB seq length: 0 DB seq length: 2000000000000000000000000000000000000	GenEmbl:* 1: gb_env:* 2: gb_pat:* 4: gb_pat:* 5: gb_pr:* 6: gb_ro:* 7: gb_ars:* 11: gb_un:* 11: gb_un:* 12: gb_htg:* 13: gb_in:* 15: gb_ov:* 15: gb_ov:* 15: gb_ba:*	No. is the number of results predigreater than or equal to the scores derived by analysis of the total SUMMARIES Query ore Match Length DB ID	2000 2000 2000 2000 2000 2000 2000 200
OM nucleic Run on: ' Title: Perfect sc.	Scoring t Searched: Word size Total num Minimum D Maximum D Post-proc	Database	Pr sc an an Result No.	1 U W 4 W 0 V 8 W 0 L 1 L 1 L 1 L 1 L 1 L 1 L 1 L 1 L 1 L

1312
8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6
241 CCATTGTACCATCHARATTGACCAMAGAGAGATAGTCTTACAAATTGAAATTCTTACAAATTCTTACAAATTCTTACAAATTCTTACAAATTCTTACAAATTCTTACAAATTCTTACAAATTCTTACAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTTACAAAATTCTTACAAATTCTTACAAATTCTTACAAATTCACAAAAATTCTTACAAAATTCTTACAAAATTCTTACAAAATTCACAAAAAA

493

ö

1527

1587

613

553

1647

673

1767

733

1827

853

793

1887

913

1947

973

2007 1033 2067 1093 2127 1153 2187 2247

g

ઠે

δ 원 8

ద

ద

8

Д

g

ò

ò

g

a ઠે a

8

요

ઠે

셤

ઠે

셤

ò

```
GAGAAGAGAGAGAGAGAGAGATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACC 1707
                                                                                    Location/Qualifiers
1. .2096
/organism='Eucalyptus grandis (flooded gum)'.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1034 AAGTICTIGGICAAGAACGAGGACGGGGTCTCCAICGCCGCACTCAACTIGAAGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1094 GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        614 CCCCACCATTATATTTATTTTCTCTCTGCTTTCCTTTGCTCGAGTCTCGGGAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  674 GAGAAGAGAGGAGAGAAGAGAATGGGTTCGACCGGATCCCGAGACCCAGATGACCCGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAGGTCCCGACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTTCTTGGTCAAGAACGAGGACGGGTCTCCATCGCCGCACTCAACTTGATGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                             1468 GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGICTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     734 caagreregaacgaggaggegaacererregegargeagergggggegeere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       914 GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCACTACTCCGTGCTCACTGCTGCTCACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCCGACCCGCGATTC
                                                                                                                                                                                                                                                                                                                                                      1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 554 GGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCAAT
                                                                                                                                                                                                                                                                                                                                                                            CCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAAGAGA
                                                                                                                                                                                                                                                                                                                  Gaps
                                                             បូ
         PC
C12N15/09,A01H5/00,C07K14/415,C12N5/10,C12Q1/02,C12Q1/68,C12N15/00,PC C12N5/00
CC C12N5/00
CC Composition and methods for the modification of gene
                                                                                                                                                                                                                                                                                                                  .
0
                                                                                                                                                                                                                                                                                  Length 2096;
                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                    .;
8
                                                                                                                                                                                                                                                                                  5;
                                                                                                                                                                                         grandis"
                                                                                                                                                                                                                                                                                  BB
                                                                                                                                                                                                                                                                              ; Score 1255; DE; Pred. No. 0; 0; Mismatches

    .2096
    /organism="Eucalyptus of mol_type="genomic DNA"
    /db_xref="taxon:71139"

                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 99.5%;
Matches 1655; Conservative 0
                                         C12N5/00
Composition a
                                                                                                                     source
                                                                                                 문답답
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1768
                                                                                                                                                                           source
                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BD262168.
BD262168.
BD262168.
BD262168.1
BD262168.1
BUCB Syd3071936

Bucalyptus grandis
SM Eucalyptus grandis
SM Eucalyptus grandis
Spermatophyta; Magnoliophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosida; Myrtaceae; Bucalyptus.

E 1 (bases 1 to 2096)
E 2 (bases 1 to 2096)
Composition and methods for the modification of gene expression and methods for the modification of gene expression
L Patent: P 2002539834-A 60 26-NOV-2002; GENESIS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE FORESTS INDUSTRIES LTD
OS EUCALPHANGE Grandis (flooded gum)
PD 2602539934-AA/60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2940
                                                                                                                                                                                            2580
                                                                                                                                                                                                                                                                                                   2700
                                                                                                                                                                                                                                                                                                                                       2700
                                                                                                                                                                                                                                                                                                                                                                          2760
                                                                                                                                                                                                                                                                                                                                                                                                              2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGCCTGAATGATGGAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTTCGAACA 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OS Eucal/ptus grandis (flooded gum)
N JP 2002539834-A/60
PD 24-NOV-2002
PP 24-FEB-2000 2
PR 25-MAR-1999 US 09/276599,30-JUL-1999 US 60/146591 PI
RANJAN PERERA, STEPHEN J RICE, CLARE KATHERINE BAGLETON PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           modification of gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGTCAAGCACGTCGGAGCGGACATGTTCGTCACGTTCCAAAGGGGAGATGCCATTTTCA
                                                                                                    TGAAGTGGATATGCCATGACTGAGTGACGACCATTGCGGGGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                           CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                  CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                     ACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                         TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                          TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTTTTGAGTCTTCTGCATACTGATTTTCACAGAATGTGTAACGAAACGGCGTATATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGCCTGAATGAAGAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTTCGAACA
             GTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                                                                                  TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                         ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2096 bp
for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Composition and methods BD262168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BD262168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2941
                                            2401
                                                                                                                                                                                                                            2581
                                                                                                                                                                                                                                                                                                   2641
                                                                                                                                                                                                                                                                                                                                       2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3061
             2401
                                                                                  2461
                                                                                                                   2461
                                                                                                                                                       2521
                                                                                                                                                                                          2521
                                                                                                                                                                                                                                                                2581
                                                                                                                                                                                                                                                                                                                                                                          2701
                                                                                                                                                                                                                                                                                                                                                                                                              2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
BD262168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
```

Forests

```
셤
                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                           95
Pb
                                                                                                                                                                                                         8 B
                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                         8 6
                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                        ద
                                                                                                                                                               q
                                                                                                                                                                                              Š
                                                                                                 В
                                                                                                                     셤
                                                                                                                                8
                                                                                                                                            g
                                                                                                                                                        8
                                                                     ò
                                                                             g
                                                                                         ò
                                                                                                             ð
                                                                                                                                                                                                                             2907
                                                                                                                                                                                                                                                                                  2053
                                                                                                                                                                                              1813
                                                                                                                                                                                                         2847
                                                                                                                                                                                                                                                         CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGAGAAATTGTGATAT 3027
                                                                                                                                                                                    2787
                                                                                     1513
                                                                                               2547
                                                                                                          1573
                                                                                                                    2607
                                                                                                                              1633
                                                                                                                                         2667
                                                                                                                                                    1693
                                                                                                                                                              2727
                                                                                                                                                                         1753
                                2367
                                                     2427
                                                                1453
                                                                          2487
                                          1393
           2307
 1273
                                                                                                                                                                                                                             GIICAIGGIICIIGGAIIIGAAAGGICGIGAAGGAGCCCIIIITCICACAGIIGGCIICGG
                                                                                                                                                                                                                                                                             GAAGTTACAAGATTTGTTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
                                                                                ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                    TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                          AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                    CTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                        TCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTG
                                                                                                     CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGCACTGT
AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTG
           GAAACATACAAGGGCTTTCGAGGGCCTTCGAGACCGTGGTCGATGTTCGGAGGCGGCACTGGG
                                GCCGTGCTCAGCATGATCGTTGCCAAATACCCCATCAATGAAAGGGATCAACTTCGACCGC
                                      3028
                                                                                                                                                                                                                                          1874
                                                                                                                                                                                                                                                               1934
                                                                                                                                                                                                                                                                          2968
                                                                                                                                                                                                                                                                                     1994
                                                                                                                                                                                                                                                                                                          2054
                                                                                                                                                                                                                                2848
                                                                                                                                                                                                                                                     2908
                                                                                                                                                       1634
                                                                                                                                                                                                           2788
                                                                                                                                                                                                                      1814
                                                                                                 2488
                                                                                                            1514
                                                                                                                       2548
                                                                                                                                 1574
                                                                                                                                            2608
                                                                                                                                                                  2668
                                                                                                                                                                            1694
                                                                                                                                                                                      2728
                                                                                                                                                                                                1754
                                   2308
                                                        2368
                                                                  1394
                                                                             2428
                                                                                       1454
              2248
                                                                                                                              8 6 8 6 8 6 B
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                          Š
                                          $ $ $ $ $ $ $ $ $
    g
            8
                      g
                                  ò
```

```
2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1827
                                                                                                                                                                                                                                                                                                                                                                                1527
                                                                                                                                                                                                                                                                                               1467
                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  733
                                                                                                                                                                                                                                                                                                                                     493
                                                                                                                                                                                                                                                                                                                                                                                                                        553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGGTATCATGGCCACCGGCGATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACATTACTATGAAGAAGATACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCCGCACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGTCTCGGACGACGAGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGGGCGCGTTCCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCACCCGTCATGCTCGACCGGGATCTTCCGGCTGCTGGCTACTCCGTGCTCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u> Accorcogogacorcocogaroscaa os respectoras os contras os costroros de respectos de</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cccanggrectabaaggccgccarcgagarcgaccrccagagarcarggccaaggacggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gagaagaagagagaagaaaaaagggrrcgaccggcrccgagacccaagargacccgaacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGTTGGTGAACCCCCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cccaccarrrancegriffratificcrecrificcrifficingsaggrengaagaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                         ö
Genesis Research & Development Corp. Ltd. and Rubicon Holdings Ltd.; Parnell; NZX;
                                                                                                                                                                                                                 Length 2096;
                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                            .,
8
                                                                                                                                                                                                                      7
                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                   Score 1255; DE Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                    1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTIT
                                                                                                                                                         DNA"
                                                                                       Location/Qualifiers
1. .2096
/organism="unknown"
/mol_type="genomic DN
                                                                                                                                                                                                                   Query Match
Best Local Similarity 99.5%;
Matches 1655; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1828
                                                                                                                                                                                                                                                                                                                                                                                             1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  794
                                                                                                                                                                                                                                                                                                                                                                                                                                     494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             674
                                                                                                    PEATURES
                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8
```

PAT 17-AUG-2003

linear

DNA

2096 bp US 6596925.

AR360953 Sequence 60 from patent AR360953 AR360953.1 GI:33768463

Unknown.

LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM

RESULT 3 AR360953

Unknown.
Unclassified.
1 (bases 1 to 2096)
1 (bases 2 to 2096)
Perera, J.R., Bagleton, C. and Rice, S.J.
Compositions and methods for the modification of gene expression patent: US 6596925-A 60 22-JUL-2003;

REFERENCE AUTHORS TITLE JOURNAL

ပ္ပ

Ы

Ы

음 중

ò

g

g ò g ò 셤 ઠે ద 8 셤 8 용

ઠે

8 &

염

ઠે

9 8

```
modification of plant lignin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1864 CAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               264 cadericecdaececagaacecegaegeacecegecarecreacegaecegarerres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          324 GCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                creracescrirasescecesisticaastricingsreaagaacaacaacasestricane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCGCACTCAACTTGATGAACCAGGACAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            444 GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              504 GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACGGCTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2164 TATCATGGCACCCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            564 TATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        224 ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2284 GTCGATGTCGGAGGCGGCACTGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATGCTTGCCAAATACCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              744 ATGAAAGGGATCAACTTCGACCTCCCCGGATTGAAGACGCTCCACCCTTCCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCAAGCACGTCGGAGGGACATGTTCGTCAGCGTTCCAAGGGAGATGCCATTTTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCGGAGTGCGTACTCCCTGTGTACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          924 gargedecricecaacaargeaaaggrearcerrecagagreegraciecargreeca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGT
PD 27-AUG-2002
PF 06-OCT-1999 JP 2000575991
PR 09-OCT-1999 US 09/169789,14-JUL-1999 US 60/143811 P
DECOURTED BY 09/169789,14-JUL-1999 US 60/143811 P
DECONARD NATHAN BLOCKSBERG, LIKKA JAAKKO HAVUKKALA PC
C12N15/09,A01H5/00,C12N5/10,C12N9/00,C12N9/02,C12N9/04,C12N9/10,C12N9/24,
PC C12N9/88,C12N15/00,C12N5/00
CC Materials and methods for the modification of plant lign:
CONTENT TOWN OBLIFIED
                                                                                                                                                                                                                                                                                                                                                                                         Length 1630;
                                                                                                                                                                                                                            grandis'
                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                               Location/Qualifiers
1. 1630
/organism='Eucalyptus
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                                                                                                                    1. .1630
/organism="Bucalyptus grandis"
/mol_type="genomic DNA"
/db_xref="taxon:71139"
                                                                                                                                                                                                                                                                                                                                                                                      Score 774; DB
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                         Query Match 25.2%;
Best Local Similarity 99.4%;
Matches 1194; Conservative
                                                                                                                                                                                                           source
                                                                                                                                                                                      Ett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2583
                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2967
                                                                                      2427
                                                                                                                            1453
                                                                                                                                                                     2487
                                                                                                                                                                                                                                                                                                                                 2607
                                                                                                                                                                                                                                                                                                                                                                        1633
                                                                                                                                                                                                                                                                                                                                                                                                                  2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATACCAAGTICTTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCCAAGTG 1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BD224383 17-JUL-2003 AMA linear PAT 17-JUL-2003 Materials and methods for the modification of plant lignin content.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT 3027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BD224383
BD224883.1 GI:33034153
BD224883.1 GI:33034153
JP 2002527058-A/107.
Eucalyptus grandis
Bucalyptus grandis
Eucalyptus grandis
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; eudicotyledons; core eudicotyledons; rosids; Myrtaceae; Eucalyptus.
1 (bases 1 to 1630)
Bloksberg, L.N. and Havukkala, I.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Materials and methods for the modification of plant lignin content
Patent: JP 2002527058-A 107 27-AUG-2002;
GENESIS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE
                         GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                         CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGGGGAGGTTT
                                                                                                                                                                                          TCGTCACCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTG
                                                                                                                                                                                                                                                                          ACGACCATTGCCGGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                       TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGACACGAGCCTAGCGACACAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGTTACAAGATTTGTTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
                                                                                                                                                                     TCGTCAGCGTTCCAAAGGGAAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTG
                                                                                                                                                                                                                                                   ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                               TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCGTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAGTTCGAGGCATTGGCCAAAGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATACCAAGTTCTTCTCATAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGATGAAATTGTGATAT
                                                                                      CCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGT
                                                                                                                                                                                                                                                                                                                                                                                                                TGATCCACATCGACTGCATCATGTTGGCCCCACAACCCAGGCGGGAAAGAGAGACACACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
      GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eucalyptus grandis
JP 2002527058-A/107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORESTS LTD
OS Eucalypt
PN JP 20025
                                                                                                                                                                                                                                                 2488
                                                                                                                                                                                                                                                                                                                               2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3028
                                                                                      2368
                                                                                                                          1394
                                                                                                                                                                   2428
                                                                                                                                                                                                         1454
                                                                                                                                                                                                                                                                                       1514
                                                                                                                                                                                                                                                                                                                                                                        1574
                                                                                                                                                                                                                                                                                                                                                                                                                2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 4
BD224383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
```

셤 ઠે g

જે

2402

803

2343

743

683

2462

863

2522

923

2642

2582

983

1923

323

1;

Gaps

1;

1983

383

2043

443

2103

503

2163

563

2223

623

214 GEOCOLIC CALCITICATA CAGGA CAMATICC CATGA ANGORA METACOLIC CATALOGO 2153 214 GEOCOLIC CALCITICATA CAGGA CAMATICC CATGA CAGGA CAG	
6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
	384 CTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCAT

```
Eucalyptus grandis

Bucalyptus grandis

Bucalyptus grandis

Eucalyptus grandis

Eukaryotus grandis

Eukaryotus grandis

Eukaryotus grandis

Eukaryotus yiridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; Myrtales; Myrtaceae; Eucalyptus.

Expera, Rice, S.J. and Eagleton, C.K.

Composition and methods for the modification of gene expression patent: JP 2002539834-A 12 26-NOV-2002; Composition and methods for the modification of gene expression.

Energis Research AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE FORESTS INDUSTRIES LTD.

S Eucalyptus grandis (flooded gum)

PD 26-NOV-2002

PF 24-FEB-2000 JP 2000608755

PR 25-MAR-1999 US 09/276599,30-JUL-1999 US 60/146591 PI RANJAN PERERA, STEPHEN J RICE, CLARE KATHERINE EAGLETON PC C12N15/09, A0115/09, A0115/
                                                                                                                                                                                                                                                                                                                                                                                                                                                       2882
2582
                                                                                                                                  1043
                                                                                                                                                                             2702
                                                                                                                                                                                                                          1103
                                                                                                                                                                                                                                                                       2762
                                                                                                                                                                                                                                                                                                                    1163
                                                                                                                                                                                                                                                                                                                                                                 2822
                                                                                                                                                                                                                                                                                                                                                                                                            1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       buz62120 661 bp DNA linear PAT 17-JUL-20
Composition and methods for the modification of gene expression.
BD262120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1284 AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG
                                                                                       GACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAAC
                                                                                                                                                                                                                                                                                                    1224 GCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAGGAAACAATAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2883 AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTTATGTTAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1344 TriridaGricricriccaracricarrircacaGaariGriGraacGaaAcGGCGrararGGArGr
                                                                                                                  CAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                                                                                                                                                                                                                                                 2763 GCTTGATCTGCTCCTCTGTGGTGTTCATGCTTCTTGGATTTGAAAGGTCGTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATAAG
                          GATGCGCTTCCCAACAATGGAAAGGTGTTCTTCCAGAGGGGGTACTCCCTGTGTACCCA
                                                                                                                                                                                  2643 CCAGGCGGGAAAGAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ပ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      methods for the modification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (1). (654)
(537). (543)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BD262120.1 GI:3307:
JP 2002539834-A/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C12N5/00
Composition expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S'UTR
TATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3063 A 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1464 A 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2943
                                                                                                                                     984
                                                                                          2583
                                                                                                                                                                                                                                                                          2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2823
                                             924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 7
BD262120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                 g
                                                                                       ò
                                                                                                                           Б
                                                                                                                                                                 8
                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2103
                                                                    18-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC 2522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC 923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCTCCCGACCCCAGAACCCCGAGACCCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     804 GTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGAGGGCTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATCATGGCACCGGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGATGTCGGAGGCGCCCTCGCTCAGCATGGTTGCCAAATACCCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         744 ATGAAAGGGATCAACTTCGACCTGCCTCACGTGATTGAAGACGCTCCACCCTTCCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG
                                                                                                                                                                                                                                                                                             Pinus radiata nucleic acids encoding O-methyl transferase and methods for the modification of plant lignin content therewith Patent: US 6653528-A 107 25-NOV-2003; Genesis Research & Development Corporation Limited and Rubicam Porests Industries Limited; Parnell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCTCCCGACCCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
                                                                    PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2; Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6; Indels
                                                                  AR432835 1630 bp D2
Seguence 107 from patent US 6653528.
AR432835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 774; I
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="unknown"
/mol_type="genomic DNA"
                                                                                                                                                                                                                          Unclassified.
1 (bases 1 to 1630)
Bloksberg, L.N. and Havukkala, I.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                       AR432835.1 GI:40195438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 1194; Conserv
                                                                                                                                                                                  Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               444
                     RESULT 6
AR432835
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
```

셤

g

ò

8

g

ò 요 ઠે a a

ઠે 셤 දු පු

ò 셤 ઠે

요 ò 요 ઠે

277

397

```
Direct Submission
Submitted (27-AUG-1993) J. Grima-Pettenati, Universite Paul
Sabatier, Centre de Physiologie Vegetale, URA CNRS 1457, 118 Route
de Narbonne, 31 062 Toulouse Cedex, FRANCE
                                                                                                                                                                                                                                                                                                                                                                                   PLN 18-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                   X74814.1 GI:437776
methyltransferade
spermatophyta; Magnoliophyta; eudicotyledons;
cosids; Myrtales; Myrtaceae; Eucalyptus.
losacs 1 to 1452;
losacs 1 to 1452;
losacs 2 methyltransferade
methy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gunnii clone 832 (AFOCEL, FRANCE)"
278 raacaaaragcrcrrgraccgggaacrccgrarrrcrcrcacaraaaccccrgarr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1104. .1121
/gene="OMT"
/inference="non-experimental evidence, no additional
details recorded"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Poeydomenge, O., Boudet, A.M. and Grima-Pettenati, J. A cDNA encoding S-adenosyl-L-methionine:caffeic acid 3-O-methyltransferase from Bucalyptus Plant Physiol. 105 (2), 749-750 (1994)
                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                            EGOMTRN 1452 bp mRNA
E.gunnii OMT mRNA for O-Methyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                     mRNA

    1452
/organism="Eucalyptus gunnii"

                                                                      TAACAAATAGCTCTTGTACCGGGAACTCCGTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="mRNA"
cultivar="BUCALYPTUS gun
/d_xref="taxon:3933"
/tissue type="xylem"
/clone_lib="Lambda zap"
                                                                                                                                                                                                                                                                                                                                                                                          1452 bp
                                                                                                                                                                                                                                        GAGAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              number="2.1.1.6"
                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'gene="OMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene="OMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 (bases 1 to 1452)
Grima-Pettenati,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_li)
1. .1452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8066135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein_bind
                                   218
                                                                        1296
                                                                                                                                                                                                                                             1416
                                                                                                                                                                                                                                                                                       398
                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                    RESULT 9
                                                                                                                                                                                                                                                                                                                                                                        EGOMTRN
                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                             g
                                                                                                                                                            ð
                                                                                                                                                                                          g
                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                  셤
                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1176 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCCAGATTGCAAAGAGCACAAAGAGCA 1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1236 CGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATATTTAATT 1295
                                                                                                                                                                                                                                                                                                                                                                                                                                        1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT 17-AUG-2003
                                                                                                                                                                                                                                                                       1175
                                                                                                                                                                                                                                                                                                                                                      1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       158 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCA 217
                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                              217
                                                                                                                                                                                                                                                                                                               157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 661)
Perera,J.R., Eagleton,C. and Rice,S.J.
Compositions and methods for the modification of gene expression
Patent: US 6596325-A 12 22-JUL-2003;
Genesis Research & Development Corp. Ltd. and Rubicon Forests
Holdings Ltd.; Parnell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATGITGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                   CGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATATTAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1176 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCCAGATTGCAAAGAGCACAAAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cgarccaaccriracaagarcarcaccagarcaccagraagacaarararr
                                                                                                                                                                                                                                                                       1116 CATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 661;
                                                                                                                                                                                        Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                             1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8.9%; Score 272; DB 2; I. larity 99.7%; Pred. No. 2.8e-141; Conservative 0; Mismatches 1;
                                                                                                                                                                                        Score 272; DB 2; L
Pred. No. 2.8e-141;
0; Mismatches 1;
                                                             1. .661
/organism="Eucalyptus grandis"
/mol_type="qenomic_DNA"
/db_xref="taxon:71139"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661 bp
US 6596925.
                   . (502)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .661
/organism="unknown"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGAGAGAGAGAGAGAGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                   signal (499). . . Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 12 from patent
AR360905
AR360905.1 GI:33768415
                                                                                                                                                                                        Query Match
Best Local Similarity 99.7%;
Matches 322; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                          CAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AR360905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Sim
Matches 322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98
                          F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              398
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                     98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
AR360905
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
```

g

g

Š

엄

ò

ď

g ò

ò

8

ઠ

ö

g

셤

ઠે

g

ઠ

g

ò

ઠ

```
2558
                                                                                                                                                                                                       2918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BD224382 407 bp DNA linear PAT 17-JUL-2003
Materials and methods for the modification of plant lignin content.
BD224382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1956
                                                                                                                                                                                                                                                    2559 GAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATC 2618
                                                                                                                                                                                                                                                                            2919 GAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATC 2978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eucalyptus grandis
Eucalyptus; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; Myrtales; Myrtaceae; Eucalyptus.

1 (bases 1 to 407)
Bloksberg, L.N. and Havukkala, I.J.
Materials and methods for the modification of plant lignin content
Patent: JP 2002527058-A 106 27-AUG-2002;
GENESIS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE
FORESTS LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ы
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C12N9/88,C12N15/00,C12N5/00
Materials and methods for the modification of plant lignin
                                                                                                                                                                                 2859 GCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATGGTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1897 AIGCICGACCGGAICTICCGGCIGCIGCCAGCIACTCCGTGCTCACGIGCACCTCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OS Bucalyptus grandis
PN JP 2002527058-A/106
PN JP 2002527002
PD 27-AUG-2002
PF 06-OCT-1999 JZ 2000575991
PR 09-OCT-1999 US 09/169789,14-JUL-1999 US 60/143811 P
LEONARD NATHAN BLOKSBERG,ILKKA JAAKKO HAVUKKALA PC
C12N15/09,A01H5/00,C12N5/10,C12N9/00,C12N9/02,C12N9/04,C12N9/
PC C12N9/24,
PC C12N9/88,C12N15/00,C12NS/00
CC Materials and methods for the modification of plant ligni
                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1957 GACCTCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        357 caccircoccarcacaacarcaaccacriciacacriracaccicacricic
                                                                Length 3022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2619 GACTGCATCATGTTGGCCCACAACCCAGGGGAAAGAGAGGGA 2661
                                                                                                                                                                                                                                                                                                                                                                        2979 GACTGCATCATGTTGGCCCACAACCCAGGGGGAAAGAGAGAAA33021
                                                             Ouery Match
5.3%; Score 163; DB 4; Length 30
Best Local Similarity 100.0%; Pred. No. 1.4e-79;
Matches 163; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Indels
VAECVLPVYPDTSLATKNVIHIDCIMLAHNPGGKER"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3.6%; Score 111; DB 2; I
100.0%; Pred. No. 3.4e-50;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .407
/organism="Bucalyptus grandis"
/mol_type="genomic DNA"
/db_xref="taxon:71139"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BD224382.1 GI:33034152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 111; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   달달
                                                                                                                                                              2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
BD224382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eucalyptus globulus

Eucalyptus globulus

Eukaryotus globulus

Eukaryotus globulus

Eukaryotus, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnollophyta; eudicotyledons; core eudicotyledons;

rosids; Myrtales; Myrtaceae; Eucalyptus.

El (bases 1 to 3022)

Spe Melis,L.E., Whiteman, P.H. and Stevenson, T.W.

Molecular cloning and sequence analysis of genomic DNA fragments
amplified enzymatically for phenylalanine ammonia lyase and caffeic
acid O-methyltransferase from Eucalyptus globulus

Unpublished

El (bases 1 to 3022)

University, GPO Box 2476V, Melbourne, Vic 3001, Australia

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /trainialation="ANDPAMQLASASVLPMVLKAAIELDLLEIMAKAGPGAFLSPGEV
AAQLPTQNPBAPVMLDRISRLLASYSVLTCTLENLPDGKVBELYGLAPVCKFLVKNBD
GVSIAALNLANQDKILMESWYYLKDAVLEGGIPPNKAYGMTAPEYHGTDDRFNKIPNR
GMSDHSTITMKKILETYKGFEGLETVVDVGGGTGAVLSMIVAKYPSKKGINPDLPHVI
EDAPPLPGVKHVGGDMFVSVPKGDAIFMKWICHDWSDDHCAKFLKNCYDALPNNGKVI
                                                                                                                                                                                                                                                                                                                                              2567
                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATC 2627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  981 CTCCCTGTGTACCCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATC 1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 19-AUG-1999
                                                                                                                                                                                                                                                                              GATGCCATTTTCATGAAGTGGATATGCCATGACTGAGTGACGACCATTGTGCGAAGTTC 920
                                                                                                                                                                                                                                                                                                                                                                             CTCAAGAACTGCTACGATGCGCTTCCCCAACATTGGAAAGGTGATCGTTGCAGAGTGCTA 980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3022 bp DNA linear PLN 19-AUG-199
Bucalyptus globulus caffeic acid O-methyltransferase (COMT2) gene,
AF168777
                                                                                                                                                                                                       801 CCACCCCTTCCTGGTGTCAAGCACGTCGGAGGGGACATGTTCGTCAGCGTTCCAAAGGGA
                                                                                                                                                                                                                                                      2448 GATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTC
                                                                                                                                                                                                                                                                                                                                              CTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTA
                                                                                                                                                              2388 CCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGA
                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                join(<1. .365,2102. .2412,2595. .2659,2826. .>3022)
/gene="COMT2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . >3022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2628 ATGTTGGCCCACACCCAGGCGGGAAAGAGAGAGACACAGAAGGAGTTCGAG 2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1041 ATGTTGGCCCACAACCCAGGCGGGAAAGAGAGGACACACAGAAGGAGTTCGAG 1091
                                                                                                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="caffeic acid O-methyltransferase"
join(-1. .365,2102. .2412,2595. .2659,2826.
/gene="COMT2"
/codon_start=1
/product="caffeic acid O-methyltransferase"
/protein_id="AAD50440.1"
                                                                       Length 1452;
                                                                  Score 189; DB 4; Length 14
Pred. No. 2.7e-94;
0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. 3022.
/organism="Bucalyptus globulus"
/mol_type="genomic DNA"
/db_kref="taxon:34317"
    /bound_moiety="ATP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF168777.1 GI:5739366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'gene="COMT2"
                                                                    6.2%;
                                                                                            Best Local Similarity 99.3
Matches 289, Conservative
                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                           921
                                                                                                                                                                                                                                                                                                                                                                                                                                        2568
                                                                                                                                                                                                                                                                                                                                              2508
                                                                       Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
AF168777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOS
                                                                    Query
                          ORIGIN
```

ပ္ပ

ö

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
DEFINITION
         LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                           TITLE
JOURNAL
FEATURES
                                                                                      ORGANISM
                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                    BD005663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
AR074115
                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1897 AIGCICGACCGGAICTICCGGCIGCIGCCAGCIACTCCGIGCICACGIGCACCCICCGC 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAT 18-DEC-2003
                                                                                                                                                                                                                                                                                                                                              1956
                                                                                                                                                                                                                                                                                                                      ö
                                                                                          Unclassified.

1 (bases 1 to 407)

Bloksbergi.N. and Havukkala,I.

Materials and methods for the modification of plant lignin content
Patent: US 6410718-A 106 25-JUN-2002;

Genssis Research & Development Corporation Ltd. and Fletcher
Challenge Forests Ltd.;;

NZX;
               PAT 25-SEP-2002
                                                                                                                                                                                                                                                                                                                                                           297 ATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACGTCCCTCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unclassified.

1 (bases I to 407)

Bloksberdit to 407)

Ploksberdit to 407

Bloksberdit ocids encoding O-methyl transferase and pinus radiata nucleic acids encoding O-methyl transferase and methods for the modification of plant lignin content therewith patent: US 655328-A 106 25-NOV-2003;

Genesis Research & Development Corporation Limited and Rubicam Porests Industries Limited; Parnell;
                                                                                                                                                                                                                                                                                                                                              1897 AIGCICGACCGGAICTICCGGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1957 GACCICCCCGATGGCAAGGICGAGCGGCTTACGGCCGCGGTGTGC 2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1957 GACCICCCCGAIGGCAAGGICGAGCGGCTCTACGGCTTAGGGCCGGTGTGC 2007
                                                                                                                                                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 407;
                                                                                                                                                                                                                                                                                             Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                        0; Indels
                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.6%; Score 111; DB 2; L
100.0%; Pred. No. 3.4e-50;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                               3.6%; Score 111; DB 2; I
Similarity 100.0%; Pred. No. 3.4e-50;
11; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         407 bp D Sequence 106 from patent US 6653528. AR432834
                  AR216432 407 bp Di
Sequence 106 from patent US 6410718.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
/wol_type="genomic DNA"
                                                                                                                                                                                                                                 1. .407
/organism="unknown"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                   Location/Qualifiers
                                                             AR216432.1 GI:23314912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 111; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown
                                               AR216432
                                                                                         Unknown
                                                                                                                                                                                                                                                                                                    Query Match
Best Local Simi
Matches 111; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14
                                                                                                                                                                                                                                        Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                         LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
AR432834
                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 , RESULT
                                                                                                                                                                                                                         PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
             AR216432
                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                           ò
```

```
OS ULLAL.
PN JP 20015003.0...
PD 16-JAN-2001
PD 16-JAN-2001
PF 10-SEP-1997 JP 1998513535
PR 11-SEP-1996 US 08/713000
PI LEONARD NATHAN BLOKSBERG, ALISTAIR WALLACE GRIERSON, FL
JAAKKO HAVUKKALA
PC C12N15/53, C12N15/54, C12N15/52, C12N15/60, C12N15/82, A01H5/00 CC
Strandedness: Single;
CC Topology: Linear,
CC Topology: Linear,
1...121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1897 AIGCICGACCGGAICTICCGGCIGCIGGCCAGCIACTCCGIGCTCACGIGCACCCICCGC 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BD005663 421 bp DNA linear PAT 31-JAN-2002 Materials and methods for the modification of plant lignin content. BD005663
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unclassified sequences.

1 (bassi i to 421)
Bloksberg, L.N., Grierson, A.W. and Havukkala, I.J.
Bloksberg, L.N., Grierson, A.W. and Havukkala, I.J.
Basterials and methods for the modification of plant lignin content Patent: JP 2001500378-A 24 16-JAN-2001;
GENESIS RESEARCH & DEVELOPMENT CO LTD, LETCHER CHALLENGE FORESTS
                                                                                                                                                                                                                                                                                                                                                                                                                ö
PAT 28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               370
                                                                                                                                                               [ (Dases 1 to 421) Bloksbergill, and Grierson, A.W. Bloksbergill, N., Havukkala, I. and Grierson, A.W. Materials and methods for the modification of plant lignin content Patent: US 5952486-A 24 14-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                     ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1957 GACCTCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 421;
                                                                                                                                                                                                                                                                                                                                                                           Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 3.6%; Score 111; DB 2; Length 42
Best Local Similarity 100.0%; Pred. No. 3.5e-50;
Matches 111; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
        linear
                                                                                                                                                                                                                                                                                                                                                                           Query Match
3.6%; Score 111; DB 2; I
Best Local Similarity 100.0%; Pred. No. 3.5e-50;
Matches 111; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="unidentified"
/mol type="genomic DNA"
/db_xref="taxon:32644"
        AR074115 421 bp 1
Sequence 24 from patent US 5952486.
AR074115
AR074115.1 GI:10000875
                                                                                                                                                                                                                                                                                           /organism="unknown"
/mol_type="unassigned DNA"
                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BD005663.1 GI:18634034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JP 2001500378-A/24.
                                                                                                                                                                                                                                                                                  .421
                                                                                                                                           Unknown.
Unclassified.
                                                                                                                     Unknown
```

Db 311 ATGCTCGACCGGATCTTCCGGCTGCTGGCCACCTACTCCGTGCTCACGTGCACCCTCCGC 370

중 ^점

rch completed. November 1 2006 16:01.04

Search completed: November 1, 2006, 16:01:04 Job time : 16938 secs

THIS PAGE LEFT BLANK

K62096 P. tremuloi

PTLBCA AF237777 A26484 AR076850 POPOME CBU86760 SSNCAFMETH

AR366728 AR382609

A26484 Poplar PPLC AR076850 Sequence M7311 Populus x g U86760 Clarkia bre L36109 Stylosanthe AR366728 Sequence AR36679 Sequence AR3659 Sequence AF454631 Coffea ca AF454631 Coffea ca AF154910 Ocimum ba AF154910 Ocimum ba AF154910 Ocimum ba AF154917 Ocimum ba AF154918 Arabidops AY081565 Arabidops AY081565 Arabidops AY081565 Arabidops AY081565 Sequence M70424 Arabidopsis AR386735 Sequence

AF454632 AF454631 AF139533 AF154917 AF154918 AF239740 AY081565 AY062837

112503 123080 123080 123080 123080 123080 123080 123080 123080 123080 123080 123080 123080 123080 123080 123080 123080 123080

AX259373 Sequence U83789 Capsicum an AF212316 Capsicum AF067968 Mesembrya

ALFSALMCAT

AX259373 CAU83789

AF212316 AF067968

ATU70424 AR366735 AR382616

ALIGNMENTS

```
Unknown.
631
621.6
618.2
618.2
618.2
618.2
603.8
603.8
603.8
601.6
601.6
601.6
592.8
592.8
                                                                                                                    566.4
                                                                                                                                                                                                                                         RESULT 1
AR360987
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                        FEATURES
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                 AR360987 Sequence
BD262168 Compositi
AR360953 Sequence
BD224383 Materials
AR216433 Sequence
AR422835 Sequence
AR422835 Sequence
AR4006009 Clarkia b
AX773024 Sequence
DQ001169 Acacia ma
AR220491 Fragaria
AX773026 Sequence
DQ001169 Acacia ma
AB086104 Rosa chin
AJ33740 Rosa chin
AJ33740 Rosa chin
AR362120 Compositi
BD262120 Compositi
AR360905 Sequence
AR66095 Sequence
                                                          (without alignments)
11193.945 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                               1 cacctgttcagtttgattcc......acttcgaacaaaaaaaaa 3030
                                                   ; Search time 17309.4 Seconds
       GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                   6366136 segs, 31973710525 residues
                                                                                                                                                  hits satisfying chosen parameters:
                                                                               US-10-702-319A-113_COPY_41_3070
3030
                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                      Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                    nucleic search, using sw model
                                                   October 31, 2006, 23:27:09
                                                                                                                                                                                                                                                                                                                                                                                                                          BD262168
AR360953
BD224383
AR216433
AR432835
AGOMTRN
AF006009
AX773024
AF220491
                                                                                                                                                                                                                                                                                                                                                                                                                    AR360987
                                                                                                                    Gapop 10.0 , Gapext 1.0
                                                                                                                                                                seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                              9b_sy:*
9b_un:*
9b_vi:*
9b_vi:*
9b_ntg:*
9b_in:*
9b_om:*
                                                                                                                                                                                                                           gb_env:*
gb_pat:*
gb_ph:*
gb_pl:*
gb_pr:*
gb_ro:*
                                                                                                                                                                                                                                                                                                                                                                                                                   3070
2096
2096
1630
1630
11630
11452
11300
11876
1198
11998
11339
                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                             IDENTITY NUC
              Copyright
                                                                                                                                                                                                                     GenEmbl: *
                                                                                                                                                                                                                                                                                                                                                                                             Query
                                                                                                                                                                                                                                                                                                                                                                                                                    1000.0
66.7.4
447.2
447.2
223.3
222.3
222.3
221.9
221.9
221.9
                                                                                                                                                                                                                                                                6:
7:
8:
9:
110:
13:
                                                                                                                                                                                       Post-processing:
                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                    3030
                                                                                                                                                                                                                                                                                                                                                                                                                          2020.4
2020.4
1429.6
1429.6
1429.6
1314
676.6
                                                                                        Perfect score:
                                                                                                              Scoring table:
                                                                                                                                                  Total number
                                                                                                                                                                Minimum DB
Maximum DB
                                    OM nucleic
                                                                                               Sequence:
                                                                                                                                   Searched:
                                                                                                                                                                                                                     Database
                                                   <u>e</u>
                                                                                                                                                                                                                                                                                                                                                                                             Result
No.
                                                                                Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                          Run
```

ö PAT 17-AUG-2003 160 100 120 180 220 240 Unclassified.
Unclassified.
I (bases 1 to 3070)
Perera, J.R., Eagleton, C. and Rice, S.J.
Compositions and methods for the modification of gene expression Patent: US 6596925-A 113 22-JUL-2003;
Genesis Research & Development Corp. Ltd. and Rubicon Forests Holdings Ltd.; Parnell;
NZX, 9 CACCTGTTCAGTTTGATTCCCTTGAGATGACCTACAGTGATAGCTTGATGATAAGATGG 101 GATAATAGATTCACCAGAGGGATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATG GTCGTTATGCATTGCATGATCCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGA 1 CACCTGTTCAGTTTGATTCCCTTGAGATGACCTACAGTGATAGCTTGATGATAAGATGG GATAATAGATTCACCAGAGGATAAAAAGGTAGGGAGATAAGGGGGATCTCCCCGTCTGATG CCTCGGGTAGGTTGAAAATAAGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACC Gaps .; 0 Length 3070; linear Indels DB 2; ö DNA 3070 bp DN Sequence 113 from patent US 6596925. AR360987 Query Match
100.0%; Score 3030;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3030; Conservative 0; Mismatches /mol_type="genomic DNA" Location/Qualifiers 1. .3070 /organism="unknown" AR360987.1 GI:33768497 41 61 121 181 셤 셤 qq à ò

AX773026 DQ001169 AB086104 RCH439740

676 675.8 671.6 671.6 664 663.2 651.8 638.2 638.2

BD262120 AR360905 AR637756

PACOMT1

160

Η.

1158

1218

280

1278

1338

1394

400

1454

460

1514

580

1574

640

1634

700

1694

760

1814

880

1754

820

1874

g

a

ò

ઠે

셤

g ò a ò g 8 g ò a ઠે a

δ

```
gum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCGCGGCACACGCCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1159 AAGGCGCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         221 AAGGGGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1515 TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1635 TCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1755 ATCBACCTCCTCBACATCATGCCAAGGCCGGCCGGGCCGCTCCTCTCCACGGGGGAA
                                                                                                                                                                                                                                                                                           CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                               CTGAGCCATTTAATTCGAGAGCACATGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                           CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               341 AACTCCGTATTTCTCTCTCATTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1395 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             461 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGACCGGATCCGAGACCCCGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              crearcerecreasarcareceasaceaseceseceseseseseseseses
                                                                                                                                                                                                                                                        Gaps
                                                     grandis (flooded
                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                 Length 2096;
                                                                                                                                                                                                                                                      Indels
                Location/Qualifiers
1. .2096
/organism='Eucalyptus
                                                                                                                                                                                                                   ..
7
                                                                                                                                                                                                                                                        11;
                                                                                                                                                                                                                   8

    .2096
    /organism="Bucalyptus grandis"
/mol_type="genomic DNA"
/db_xref="taxon:71139"

                                                                                                                                                                                                               ; Score 2020.4;
; Pred. No. 0;
0; Mismatches
                                                                           Location/Qualifiers
                                                                                                                                                                                                                 66.7%;
                                                                                                                                                                                                                                   Similarity 99.3
11; Conservative
expression
                  Key
source
                                                                                                                                                                                                                 Query Match
Best Local Simil
Matches 2041; C
                    HH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        641
                                                                                                                                                                                                                                                                                                                                                                             1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1815
                                                                                                                                                                                                                                                                                             979
                                                                                                                                                                                                                                                                                                                                      41
                                                                                                                                                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                821
                                                                                                  source
                                                                              FEATURES
                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                े
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                 ठ
                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFORMS

DEF
                                                                                                                                                       2580
                                                                                                                                                                                              2620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2820
                                    2500
                                                                              2520
                                                                                                                  2560
                                                                                                                                                                                                                                   2640
                                                                                                                                                                                                                                                                          2680
                                                                                                                                                                                                                                                                                                                 2700
                                                                                                                                                                                                                                                                                                                                                        2740
                                                                                                                                                                                                                                                                                                                                                                                                 2760
                                                                                                                                                                                                                                                                                                                                                                                                                                      2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ar PAT 17-JUL-2003
gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TIGITIGITITIATGECTATAAAGITTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTTT
AAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGC
                    GAAGTICCICAAGAACIGCIACGAIGCGCTICCCAACAAIGGAAAGGIGAICGTIGCAGA
                                                                                                  GAAGTICCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGA
                                                                                                                                                         GTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGA
                                                                                                                                                                                GTGCGTACTCCCCTGTGTACCCCGACCAGACCTGGACCAAGGATGTGATCCACATCGA
                                                                                                                                                                                                                                     CTGCATCATGTTGGCCCACACCCAGGCGGGAAAGAGAGGACCACAGAAGGAGTTCGAGGC
                                                                                                                                                                                                                                                              ATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCA
                                                                                                                                                                                                                                                                                                                                        ATTGGCCAAAGGGGCCGGATTTCAGGCTTCCAAGTCATGTGCTGCGCGCTTTCGGCACTCA
                                                                                                                                                                                                                                                                                                                                                                                                 CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                      CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rcrcataaaaggaaacaataagaagcgacrgtargarggcgcaagrggaagtracaagar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAGTAAATCACTTCGAACAAAAAAAAA 3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2096 bp
for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BD262168
                                       2441
                                                                              2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3001
2401
                                                                                                                  2501
                                                                                                                                                         2521
                                                                                                                                                                                                2561
                                                                                                                                                                                                                                     2581
                                                                                                                                                                                                                                                                          2621
                                                                                                                                                                                                                                                                                                                 2641
                                                                                                                                                                                                                                                                                                                                                        2681
                                                                                                                                                                                                                                                                                                                                                                                                 2701
                                                                                                                                                                                                                                                                                                                                                                                                                                      2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 2
BD262168
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
```

a

ò

```
Query Match
Best Local Similarity
Matches 1385; Conserv
                                                                                                                        8066135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1619
                                ORGANISM
                                                                                                                                           AUTHORS
TITLE
JOURNAL
                                                                                AUTHORS
TITLE
                                                                                                                        PUBMED
REFERENCE
                                                                                                                                                                                                                                                                              gene
 VERSION
KEYWORDS
SOURCE
                                                                                                             JOURNAL
                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                              2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1440
                                                                                                                                                                                                                                                                              2519
                                                                                                                                                                                                                                                                                                                       2579
                                                                                                                                                                                                                                                                                                                                                                2639
                                                                                                                                                                                                                                                                                                                                                                                   1080
                                                                                                                                                                                                                                                                                                                                                                                                       2699
                                                                                                                                                                                                                                                                                                                                                                                                                          1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1141 ACGICATGGAGTICCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCT 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC 2819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA 2879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTCATAAAAGGAAACAATAAGAAGGGACTGTATGATGGCGCAAGTGGAAGTTACAAGA 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITGITGITITATGICIATAAAGITITIGAGICITCIGCATACIGATITCACAGAAIGIGT 2939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTT 2999
                                2160
                                                                        2220
                                                                                                                                                        2339
                                                                                                                                                                                                2399
                                                                                                                                                                                                                                       2459
                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                   960
                                                    900
                                                                                           9
           540
                                                                                                                                                                                                                                                                                                                                  CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTA
                                                                                     781 AAGACGCTCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                       CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG
                                                                                                                                                                                                                                                   AGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                                                                                                                2580 ACTGCATCATGTTGGCCCACACACCCAGGCGGAAAGAGAGACACACAGAAGGAGTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                            CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTTTA
                                                                        ACCEGEGAATETCTGATCACTCCACCATTACTATGAAGAAAATACTGGAAACATACAAGG
                                                                                                                GCTTCGAGGGCCTCGAGACCGTCGATGTCGGAGGCGGCACTGGGGCCGTGTCAGCA
                                                                                                                                    gerredaddeceredadaeceregregregregregregregedeceregedecerecredeca
                                                                                                                                                                                                                                                                                                                                                                                                       CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCT
                                                                                                                                                       TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                                                                                                                                                AAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TICAGIAAAICACIICGAACAAA 3023
                                                                                                                                                                                                                                                                                                                                                                                                                                                2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1381
                                                                                                                                                                                                                                                                                                                                                                                                        2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3000
                                                                                                                                                                                                                                                                                 2460
                                                                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
                                  2101
                                                                                                                 2221
                                                                                                                                                         2281
                                                                                                                                                                                                 2340
                                                                                                                                                                                                                                        2400
                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                         2520
                                                                                                                                                                                                                                                                                                                                            961
                                                     541
                                                                          2161
                                                                                             601
                                                                                                                                     661
                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                     901
             481
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                      g
                                                                                                                                g
                                                                                                                                                                                        8 6 8 6
                                                                                                                                                                                                                                                                          ያ ያ
                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                ठे
                                                                                                                                                                                                                                                                                                                                                                             ρp
                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                 g
                                                                         ઠે
                                                                                                         ò
                                                                                                                                                        8 6
                                ò
```

PLN 18-APR-2005

linear

EGOMTRN 1452 bp mRNA E.gunnii OMT mRNA for O-Methyltransferase. X74814

RESULT 7
EGOMTRN
LOCUS
DEFINITION
ACCESSION

```
/protein_id="CAA52H1.1"
/db_xref="G1:43777"
/db_xref="G1:43777"
/db_xref="G1:43777"
/db_xref="InterPro:1PR00051"
/db_xref="InterPro:1PR001077"
/db_xref="Int
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1739 AAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTT 1798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAGGAGAGAATGGGTTCGACCGGCTCCGAGACCCCAGATGACCCCGACCCAAGTCTCGGA 1678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGCCCTCCGTGCTCCCATGGTCCT 1738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 (bases 1 to 1452)
Grima-Pettenati,J.
Direct Submission
Submitted (27-AUG-1993) J. Grima-Pettenati, Universite Paul
Sabatier, Centre de Physiologie Vegetale, URA CNRS 1457, 118 Route
de Narbonne, 31 062 Toulouse Cedex, FRANCE
Location/Qualifiers
methyltransferase.

Bucalyptus gunnii (cider tree)

Bucalyptus gunnii (cider tree)

Bucalyptus gunnii (cider tree)

Bucalyptus gunnii (cider tree)

Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;

rosids; Myrtales; Myrtaceae; Eucalyptus.

1 (bases I to 1452)

Poeydomenge, O., Boudet, A.M., and Grima-Pettenati, J.,

A CDN encoding S-adenosyl-L-methionine:caffeic acid

3-O-methyltransferase From Eucalyptus

Plant Physiol. 105 (2), 749-750 (1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Bucalyptus gunnii"
/mol type="mRNA"
/cultivar="BUCALYPTUS gunnii clone 832 (AFOCEL, FRANCE)"
/db_xref="taxon:3933"
/tissue type="xylem"
/clone_lib="tambda zap"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Areagiticcatiticciciticcititgaticaagiticgcggaagagagaaaaaaagagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71 AGAGGAGAGAATGGGTTCGACCGGATCCGAGACCCAGATGACCCCGACCCAAGTCTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               no additional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4; Length 1452;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /inference="non-experimental evidence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EFETLAKGAGFQGFQVMCCAFGTHVMEFLKTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="0-Methyltransferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1314; DB
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          number="2.1.1.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /bound_moiety="ATP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   details recorded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43.4%;
ilarity 96.9%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="OMT"
/EC_number="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1104. .1121
/gene="OMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'gene="OMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  81. .1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
```

8 6 6 6

6 6 6

8

8 6

셤 ò ద 8

♉

```
/codon statt=1
/product="caffeic acid O-methyltransferase"
/product="caffeic acid O-methyltransferase"
/product="caffeic acid O-methyltransferase"
/db xxef="cf:240207"
/translation="MOSTGRAETOLTPTHYSDEBANLFAMOLASASVLPWYLKAAIEL
DVLEINAKASIPHGSGAYISPAEIAAQLPTHYSDEBANLFAMOLASASVLPWYLKAAIEL
DVGENGRLYGIAPVCKELTKNEDGVSIAPLCIANYORVLMESWYYLKOAILDGGIPFN
KAYGMTAFEYHGTADFRENKVPNRGMSDHSTITMKKIFEMYTGFEALNTIVDVGGGTGA
YGMNTAKFENKOYAALEHGKYUYVAECILPLSPDFSLATKGVIHIDAIMLAHNPGGKE
RTEKEFFRALGGGFKGFKVACCAFNTYVMEFLKTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGGCGAGCGCCTCCGTGCTCCCATGTCCTAAAGGCCGCCATCGAGATCGACCTCC 1764
                                                                                                                                                                                                           24-SEP-1997
mRNA,
                                                AAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGTATACTGATTTC 1390
                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 1300)
Wang, J. and Pichbersky, B.
Nucleotide Sequence of S-Adenosyl-L-Methionine:Caffeic Acid
3-O-Methyltransferase from Clarkia breweri (Accession No. AF006009)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of Michigan, 830 North
                                                                                                                                                                                                                                                                                                                                      Clarkia breweri
Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta; eudicotyledons; core eudicotyledons,
rosids; Myrtales; Onagraceae; Clarkia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Characterization of (Iso) eugneol O-Methyltransferase Involved Floral Scent Production in Clarkia breweri
                                                                                    2978
                                                                                                    10;
                                                                                                                                                                                                             bp mRNA linear PLN O-methyltransferase (COMT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1300;
                                                                                    ACAGAATGTGTAACGAGAACGGCGTATATGGATGTGCCTGAATGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ploral Compublished

'Unpublished

'S (bases 1 to 1300)

'S Wang, J. and Pichersky, E.

Direct Submission

'AL Submitted (29-MAY-1997) Biology, University of
University Avenue, Ann Arbor, MI 48109, USA

Location/Qualifiers

1300

""" arkia breweri"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="COMT"
/function="biosynthesis of lignin and
phenylpropanoids"
                AAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTGAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 676.6; DB 4;
Pred. No. 6.1e-172;
0; Mismatches 254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Clarkia breweri"
/mol_type="mRNA"
/db_xref="taxon:36903"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plant Physiol. 114, 1567 (1997)
2 (bases 1 to 1300)
Wang,J. and Pichersky,E.
Characterization of (Iso)eugneo
                                                                                                                                                                                                               1300
caffeic acid
                                                                                                                                                                                                                                                                                      GI:2240206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vuery Match
Best Local Similarity 76.5%;
Matches 859; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene="COMT"
                                                                                                                                                                                                             AF006009
Clarkia breweri c
complete cds.
AF006009
                                                                                                                                                                                                                                                                                                                Clarkia breweri
                                                                                                                                                                                                                                                                                      AF006009.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (PGR97-104)
                                                  1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1705
                2869
                                                                                     2929
                                                                                                                       1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                           RESULT 8
AF006009
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                         원
                                                                                    8 6
                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2809
                                                                                                                                                                                                                                                                                                                         2098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1150
                                 CCTCTCCACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCAT 1858
                                                                                                                                                                                                                                                  CAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCT 2038
                                                                                                                                                                                                                                                                                                                                                                                                GGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTT 2158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAACCGGGGAATGTCTCATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAA 2218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAG 2278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGAT 2337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               910
                                                                                                                                                                                                                                                                                      490
                                                                                                                                                                                                                                                                                                                                                                                                                                    610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      970
                                                           CCTCTCCCCGGGGGAAGTCGCGGCCCAGCTCCCGACCCCAGAACCCCGAGGCACCCCGTCAT 310
                                                                                                                             GCTCGACCGGATCTTCCGGCTGCTGGCCACCTCCGTGCTCACGTGCACCTCCGCAA 370
                                                                                                                                                                                                         CCTCCCCGATGGTAGGTCGAGCGCCTCTAGGCTTAGCTCCGGTGTGCAGTTCTTGGT 430
                                                                                                                                                                                                                                                                                                                                          AGAGTGCGTACTCCCTGTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTGATGTGCTGCGGCTTTCGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGAACGAGGACGACGCCCTCCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCT
                                                                                                                                                                                                                                                                                                                           CATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                     GCCGTACGGGATGACCGCATTCGAGTATCATGGCACCGACCCTCGATTCAACAAGATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAACCGGGGAATGTCTGATCACTCCACTATCATGAAGAAGATACTGGAAACGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGATCGTTGCCAAATACCCATCGATGAAAGGGATCAACTTCGACCTGCCTCACGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGGGACATGTTCGTCAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAAAGGGAGATGCCATTTCATGAAGTGGATATGCCATGACTGGGGTGACGACGATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rccaaagggargccarrrrcargaagrggarargccargacrgagrgacgaccarrg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACATTGGAAAGGTGATCGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGTGCGTACTCCCTGTGCTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGACTGCATCATGTTGGCCCCACAACCCAGGCGGAAAGAGAGGACACAGAAGGAGTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCATTGGCCAAAGGGCCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTC--CTCTGTGGTGATGTTCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCTTGGATTTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGC-----TTCGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACCAAG-TICTICTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTCGACCGGATCTTCCGGCTGCTGGCTACTCCGTGCTCACGTGCACCCTCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1211
                                                                                                        1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1151
                                   1799
                                                                                                                                          311
                                                                                                                                                                               1919
                                                                                                                                                                                                                 371
                                                                                                                                                                                                                                                  1979
                                                                                                                                                                                                                                                                                                                           2039
                                                                                                                                                                                                                                                                                                                                                                                                  2099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      911
191
                                                                      251
                                                                                                                                                                                                                                                                                      431
                                                                                                                                                                                                                                                                                                                                                               491
                                                                                                                                                                                                                                                                                                                                                                                                                                     551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            791
```

엽

ઠે

중 음

g

ò q ò g

ብ ጵ

셤

ò

8 8

요

∂

ò

g

ò

~

Page

PAT 09-JUL-2003

```
GITGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC 2344
                                                                                                                                                                                                                                                                                                                                                                                                                               AGAATGGGTTCGACCCGCTCCGAGACCCCAGATGACCCCGACCCAAGTCTCGGACGACGAG 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCC 1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAAC 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1986 GAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAA 2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2046 AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC 2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGGGCCTCAAATCCATCGTTGATGTCGGTGGCGGCACCGGAGCTGTGGTGAACATGATC 759
                                                                                 Fragaria x ananassa
Fragaria x ananassa
Bukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids I; Rosales; Rosaceae; Rosoideae; Fragaria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        340 cerarectrecientres de caractrecarrera de caractrecarrecera es es 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             280 CCTAGTGATCTAGCCTCTCAGCTTCCGACCAAGAACCCCGGAAGCTCCGGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gaadardecercrerarrecrerecrerecreardaaccaddagecercreread
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2106 GGGATGACCGCGTTCGAGTATCATGGCACCGGCCGCGATTCAACAAGATCTTTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCATGACTGCATTTGATTACCATGGAACTGACCCTAGATTCAACAAGGTCTTCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAATGGCTGACCACTCCACCATTACCATGAAGAAAATCCTTGAGACTTACAAAGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGAACCTCTTCGCCATGCAGCTGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                220 gecarceaecreaecrerragasarcaresecaaseceseaecesecrerricerere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1806 ACGGGGGAAATCGCGGCACACACTCCCGACAACCCCGAGGCACCCGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        400 gacescaaagireagaescriciacrerireseaccrerereraagirerreaccaagaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     520 AGCTGGTATCATTTGAAGGATGCAGTTCTTGATGGTGGGATTCCATTTAACAAGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAATGTCTGATCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATC
                                                                                                                                                                  1
Schwab,W., Kaldenhoff,R. and Wein,M.
Multifunctional caffeic acid o-methyltransferase
Patent: WO 03046163-A 1 05-UUN-2003;
Bayerische Julius-Maximilians-Universitaet Wuerzburg
                                                                                                                                                                                                                                                                                                                                                               Length 1876,
     linear
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches 250;
                                                                                                                                                                                                                                                                                                                                                               Score 676; DB 2; 1
Pred. No. 8.2e-172;
                                                                                                                                                                                                                                                                                 ananassa"
DNA"
     DNA
   1876 bp
from Patent W003046163
                                                                                                                                                                                                                                                                1. .1876
/organism="Fragaria x
/mol_type="unassigned
/db_xref="taxon:3747"
                                                                                                                                                                                                                                                 Location/Qualifiers
                                                    AX773024.1 GI:32485193
                                                                                                                                                                                                                                                                                                                                                               Query Match 22.3%;
Best Local Similarity 77.0%;
Matches 850; Conservative
                     _
AX773024
Sequence 1
AX773024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       280
                                                                                                                                                                                                                                                                                                                                                                                                                                 1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                               103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2286
                  DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                    source
                                                                                                   ORGANISM
                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                   PEATURES
                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                              업
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                음 상 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                     1935
                                                                                                                                                                                                                                                                                                                                                                  2115
                                                                                                                                                                                                                                                                                                                                                                                                                               2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1099
                                                                                                                                                                                                                                    TCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAAGGAGGACGGGG 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC 2714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCG 2235
                                      -----GACGGCCGGCGCGTTCCTCTCCACGGGGAAA 1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCCATCAATGAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCCACCC 2354
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATTTGAGTACCATGGCACCGATCCTAGATTCAACAAAGTGTTCAACAGGGGAATGTCCG 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                860 ACTGTTACGCTGCACTTCCGGAGCATGGGAAGGTGATAGTTGCAGAATGCATACTTCCTT 919
                                                                                                                                                                                                                                                                                                                                  TTTCCCTTGCTCCTCTTTGTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTACT 439
                                                                                                                                                                                                                                                                                                                                                                                                 ACTTGAAGGATGCGATTCTGGACGGAATTCCATTCAACAAGGCTTATGGAATGACAG 499
                                                                                                                                                                                                                                                                    TGGAGAGGCTGTACGGCCTCGCCCCTGTCTGCAAGTTCTTGACCAAGAACGAGGATGGAG 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTGGCCAGCGCCTCCGTCCTCCCCATGGTCCTCAAGGCCGCCATCGAGCTCGACGTCC
                                                                                                                                                                   GGCTGCTGGCCAGCTACTCCGTGGTCAGGTGCACCTCCGCGACCTCCCCGATGGCAAGG
                                                                                                                                                                                         accaciccaccarcarcargaagarcrirgaaargracacggarrcgaggcccraa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    740 ATCCTGGTGTGGAGCATGTTGGAGGAGATATGTTTGTTAGTGTCCCCAAAGGCGACGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          920 TGTCTCCTGACCCGAGTCTGGCCACCAAGGGAGTGATCCATATCGACGCCATCATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCACACACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CIGGATICAAGGGCTICAAAGTAGCATGTIGTGCCTTCAACACACTTACGTCATGGAATTCC
                                                                 rcasastrargaccasaccarcecreacacaacaacaccaracarereceaaaaaa
                                                                                                     TCGCGGCACAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCC
                                                                                                                           200 TCGCCGCCCAGCTCCCTACCACCAACCCGGACGCTCCGGTGATGCTCGACCGCGTCCTCC
                                                                                                                                                                                                                                                                                                    TCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATT
                                                                                                                                                                                                                                                                                                                                                                    ACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTTCGAGTATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGACCGTGGTCGATGTCGGAGGCGCCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTCATGAAGTGGATATGCCATGACTGGACGACGACCATTGCGCGGAAGTTCCTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTCATGAAGTGGATTTGCCACGACTGGAGCGACGAGCACTGCCTGAAGTTCCTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTACCCAGACCACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rcaaaacccrraacrgarraargrrcgaaaargrcgagcrrr 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTT 2757
                                     TCGAGATCATGGCCAAG-
                                                                     140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1100
                                      1765
                                                                                                     1816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2715
                                                                                                                                                                   1876
                                                                                                                                                                                                                                    1936
                                                                                                                                                                                                                                                                                                    1996
                                                                                                                                                                                                                                                                                                                                                                  2056
                                                                                                                                                                                                                                                                                                                                                                                                   440
                                                                                                                                                                                                                                                                                                                                                                                                                                 2116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         980
        80
                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                  320
                                                                                                                                                                                                                                                                                                                                    380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              620
                                                                                                                                                                                                                                                                                                                                                                                                                     6 B 6 B 6 B 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                              B 公 B 公 B 公 B 公 B 公 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                ઠે
```

1745

5

4

1805

279

219

1865

459

519

2165

639

579

2225

669

2285

GrirccaAgracccricgarcaAgggcarcaAcricGAcricGAcriccargrararcaAgar 819

760

셤

RESULT 9 AX773024

ς,

셤

ð

g ઠે g

a

ઠ

임

ò

g ઠે 셤

ò

```
1685
                                                                                                                                                                                                                                                                 1805
                                                                                                                                                                                                                                                                                                                                       1865
                                                                                                                                                                                                                                                                                                                                                                                                              1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC 2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1000 africiriceriefrecaceadacaceradecireceaceadeagererecearaficaren 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2644
                                                                                                                                                                                                                                                                                                                                                                                                                                               399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    666
                                                                                                                                                                                                                              219
                                                                                                                                                                                                                                                                                                    279
                                                                                                                                                                                                                                                                                                                                                                         339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               939
                                                                                                                                                                                                                                                                                                                                                                                                                                    340 CGTATGCTTCGCCTTCTGGCCAGCTACTCCATTCTAACCTGCTCATTGCGTACGCTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              940 TICTIGAAGAACTGCTACGCTGCGCTTCCAGACGATGGCAAAGTGATTCTTGCTGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATGTTGGCCCACAACCCAGGGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTG
                                                                                                                      1626 AGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGAG
                                                                                                                                                                                                                                                                                                                                                              CGGATCTTCCGGCTGCTGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGGCAAGGTCGAGCGCCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            460 GAAGATGGCGTCTCTATTGCTGCTCTCTGCCTCATGAACCAGGACAAGGTCCTCGTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    640 GGAATGGCTGACCACCACTTACCATGAAGAAAATCCTTGAGACTTACAAAGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCCACTGGGGCCGTGCTCAGCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2345 GCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGGACGACCATTGCGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               880 eganatricaricargangregaratercaceacregaereseceacearesean
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC
                                                                                                                                                       AAAATGGGTTCCACCGG---CGAGACTCAGATGACTCCGACCCATGTCTCCGACGAGGAA
                                                                                                                                                                                              1686 GCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                 160 GCCAACCTCTTCGCCATGCAACTCGCCAGCGCCTCCGTCCTCCCCATGGTCCTCAAAGCC
                                                                                                                                                                                                                                                                 GCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTC
                                                                                                                                                                                                                                                                                       220 GCCATCGAGCTCGACCTCTTGGAGATCATGGCCAAGGCCGGACCCGGCTCTTTCCTCTCC
                                                                                                                                                                                                                                                                                                                                       1806 ACGGGGGAAATCGCGGCACACACTCCCGACCCAGAACCCCGAGGCACCCGGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    400 gacciccaaactricacaccicracretrirecaaccretricaactaactricaaccaacaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGGACGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               520 agcragrarcarrrcaaggargcagrrcrrcarggrcggarrccarrraacaaggccrar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAATGTCTGATCACTCCACTTACTATGAAGAAGATACTGGAAACATACAAGGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTTCCAAGTACCCTTCGATCAAGGCCATCAACTTCGACTTGCCTCATGTTATCGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC
                                                                                     Gaps
                                                                                       4;
                                                Length 1876;
                                                                                     Indels
                                                Score 676; DB 4; L
Pred. No. 8.2e-172;
); Mismatches 250;
FEALAKGSGFQGIRVCCDAFNTYVIEFLKKI
                                                                                     ;
0
                                              22.3%;
nilarity 77.0%;
Conservative 0
                                                                    Similarity
                                                                                   Matches 850;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2465
                                                                                                                                                                                                                                                                 1746
                                                                                                                                                                                                                                                                                                                                                                                                              1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2525
                                                                                                                                                           103
                                                                                                                                                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             820
                                                     Match
                                                                        Local
                                                     Query
                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                        à
                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                            8
                                                                                                                                                                                                                                                             ठ
                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF220491 1876 bp mRNA linear PLN 27-JAN-2000
Fragaria x ananassa O-methyltransferase (omtl) mRNA, complete cds.
AF220491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /trānslation="MGSTGETQMTPTHVSDEEANLFAMQLASASVLPMVLXAAIELDD
LEINAKAGFGSFLSFSDLASQLPTKNPEAPVMLDRMIRLLASYSILTCSLRTLPDGKV
ERLYCLGFVCKFLTKNEDGGVSIAALCLANQDKVLVESWYHLKDAVLDGGIPFNKAYGM
TAFDYHGTDPRFNKVFNKGMADHSTINKKILLEYTKGFFGLKSIVDVGGTGAVVNMI
VSKYPSIKGINRDLPHYIEDAPQYFGVQHVGGDMFVSYPKGNAIFMKATCHDWSDEHC
IKFLKNCYAALPDDGKVILAECILPVAPDTSLATKGVVHMDVIMLAHNPGGKERTEQE
                                                                                     2464
                                                                                                                                                                                                                                                                   1059
                    2404
                                                                                                                                                           2524
                                                                                                                                                                                                                                  2584
                                                                                                                                                                                                                                                                                                                                                                            2704
                                                                                                                                                                                                                                                                                                                                                                                                              GCTAAGGGTTCTGGATTCCAAGGCATTCGCGTCTGCTGTGATGCTTTCAACACCTATGTC 1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fragaria x ananassa
Fragaria x ananassa
Bukaryota, viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Vaidiplantae, Streptophyta; Embryophyta; Tracheophyta;
rosids; eurosids I; Rosales; Rosaceae; Rosoideae; Fragaria.
I (bases I to 1876)
Kaldenhoff, R., Wein, M. and Schwab, W.
Isolation and characterization of a O-methyltransferase from.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      fuer
                    GCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG
                                     GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAG
                                                                                                               GGAAATGCAATTTTCATGAAGTGGATATGTCACGACTGGAGTGACGAGCATTGCATAAAA
                                                                                                                                                           TTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC
                                                                                                                                                                                            rrcrigaagaacrecracerecerriceagacgareceaaagrearrerrecreagaerec
                                                                                                                                                                                                                                  GTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACCATCGACTGC
                                                                                                                                                                                                                                                                 ATTCTTCCTGTTGCACCAGACACTAGCCTTGCCAAGGGAGTTGTCCATATGGATGTG
                                                                                                                                                                                                                                                                                                        ATCATGTTGGCCCACACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTG
                                                                                                                                                                                                                                                                                                                                         ATCATGTTGGCGCACCAACCCTGGCGGCAAAGAGAGACGGAGCAGGAATTTGAAGCCCTG
                                                                                                                                                                                                                                                                                                                                                                            GCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chases 1 to 1876)

Kaldenhoff,R., Wein,M. and Schwab,W.

Direct Submission

Submitted (03-ZMV-2000) Botanik I, Julius-von-Sachs-Institut
Biowissenschaften, Julius-von-Sachs-Platz 2, Wuerzburg 97082,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
1. 1876
/organism="Fragaria x ananassa"
/onl type="mmxN"
/culTivar="Elsanta"
/db_xref="taxon:3747"
/gene="omt!"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/product="0-methyltransferase"
/protein_id="AAF28353.1"
/db_xref="GI:6760443"
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGGAGTTCCTGAAGACCGCTTGA 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:6760442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106. .1203
/gene="omt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Jnpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF220491.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 strawberry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Germany
                                                                                                                                                                                                                                                                 1000
                                                                                                                                                           2465
                                                                                                                                                                                                                                  2525
                                                                                                                                                                                                                                                                                                                                         1060
                                                                                                                                                                                                                                                                                                                                                                                                              1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2705
                    2345
                                                   820
                                                                                       2405
                                                                                                                        880
                                                                                                                                                                                              940
                                                                                                                                                                                                                                                                                                        2585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1180
                                                                                                                                                                                                                                                                                                                                                                              2645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF220491
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
```

g

ઠે

ద

8

```
2597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1087
2178
                                                                                                                                                                                                           2298
                                                                                                                                                                                                                                                                                                                   2357
                                                                                                                                                                                                                                                                                                                                                                                                                        2417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-SEP-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Acacia mangium x Acacia auriculiformis
Acacia mangium x Acacia auriculiformis
Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons;
rosids; eurosids I; Fabales; Fabaceae; Mimosoideae; Acacieae;
                                                                                                                                                                                                                                                               667
                                                                                                                                                                                                                                                                                                                                                                  727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        907
                                                    547
                                                                                                                                                      607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     In (bases 1 to 1408)
Sukganah, A., Wickneswari, R. and Choong, C.Y.
Sukganah, A., Wickneswari, R. and Choong, C.Y.
Sull length of Acacia mangium x Acacia auriculiformis hybrid cDNA clones encoding cinnamoyl-CoA reductase (CCR) and caffeic acid O-methyltzansferase (COMT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2119 TCGAGTATCATGGCACCGGCGCATTCAACAAGATCTTTAACCGGGGAATGTCTGATC
                                                                                                        ACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGA
                                                                                                                                      CCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACC
                                                                                                                                                                                                                                                         608 CCATCGTTGATGTCGGTGGCGGCACCCGAGCTGTGGTGAACATGATCGTTTCCAAGTACC
                                                                                                                                                                                                                                                                                                                   CATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGACGCCCCACCCTTC
                                                                                                                                                                                                                                                                                                                                                                  cricaaicaaggacarcaacricgacrigccrcargraficgaagargcrccrcaararc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       crecretroacecerreaaeaeaeacarerreraaereraceaaaeaeaaarecaarrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCATGAAGTGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2538 ACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                908 caccadacacradecrireccaccaageaarrerecanareaareraarearearearearearearearearea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCCATTGGCCAAAGGGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2658 GATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTT
                                                 rrdarraccarddaacrdacccradarrcaacaadgrcrrcaacaaddaarddcrdacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οĘ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (Or-APR-2005) School of Environmental and Natural
Resource Sciences, Universiti Kebangsaan Malaysia, Faculty of
Science and Technology, Bangi, Selangor 43600, Malaysia
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear caffeic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 1408)
Choong, C.Y., Wickneswari, R. and Sukganah, A.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DQ001169 1408 bp mRNA Acacia auriculiformis conethyltransferase mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:68159361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2718 AGACCGCTTGA 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAGATCTGA 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DQ001169
DQ001169.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acacia
                                                      488
                                                                                                        2179
                                                                                                                                                            548
                                                                                                                                                                                                                2239
                                                                                                                                                                                                                                                                                                                        2299
                                                                                                                                                                                                                                                                                                                                                                                                                              2358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1028
                                                                                                                                                                                                                                                                                                                                                                          668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
DQ001169
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                      q
                                                                                                                                                 g
                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                           ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCATGCAGCTGGCGAGCGCCTCCGTGCTCCCTAAAGGCCGCCATCGAGATCG 1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCCGATGGCAAGGTCG 1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCATCGCCGCACTCAACTTGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACC 2058
                                                                                                                                                                                                                                                                                                                                                       09-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128 Accretriciada de la comencia de la comencia de la contracta de la comencia del comencia de la comencia del comencia de la comencia del la comencia de la comencia del la comencia de l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cerereagerrecaacaagaaceecaaagerecagareargeregaeegrargerregee 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCTGGCCAGCTACTCCATTCTAACCTGCTCATTGCGTACGCTTCCGGACGGCAAGTTG 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGGCTCTACTGTTTGGGACCTGTGTGTAGTTCTTGACCAAGAATGAAGATGGCGTCT 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fragaria x ananassa
Mukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicotyledons,
rosids, eurosids I; Rosales, Rosaceae, Rosoideae, Fragaria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     둉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crarrecrecrerereareaaceaeaeaeaecereereereaaeaeereere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1639 CCGGCTCCGAGACCCCAGATGACCCCGACCCCAAGTCTCGGACGACGACGCGAAGCCTCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCATGTTGGCGCACAACCCTGGCGGCAAAGAGAGGACGGAGGAGCAGGAATTTGAAGCCCTG
                                                         GCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTC
                                                                                             GCTAAGGGTTCTGGATTCCAAGGCATTCGCGTCTGCTGTGATGCTTTCAACACACTATGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     - 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (DE)
                                                                                                                                                                                                                                                                                                                                                    PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleotides 106
ID No. 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22.3%; Score 675.8; DB 2; Length 1098; llarity 76.8%; Pred. No. 1e-171; Conservative 0; Mismatches 252; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schwab,W., Kaldenhoff,R. and Wein,M.
Multifunctional caffeic acid o-methyltransferase
Patent: WO 03046163-A 3 05-UUN-2003;
Bayerische Julius-Maximilians-Universitaet Wuerzburg
                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Fragaria x ananassa"
/mol_type="unaasigned DNA"
/db_xref="taxon:3747"
/note="sequence corresponds to r
SEQ ID No. 1 and codes for SEQ 1
                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                    AX773026 1098 bp
Sequence 3 from Patent WO03046163.
AX773026
                                                                                                                                                               2728
                                                                                                                                                                                                                Arrcacirriciraacaacarcrca 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                 2705 ATGGAGTTCCTGAAGACCGCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                              AX773026.1 GI:32485194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fragaria x ananassa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 838;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2059
                                                         2645
                                                                                                             1120
                                                                                                                                                                                                                      1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                        AX773026
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                  RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
```

g

6 음

g

8

8

g ð g õ g

ð

엄 ઠે

ç

2537

978

1038 2657 1098 2717

2597

```
AB086104 1393 bp mRNA linear PLN 21-JAN-2006 Rosa chinensis var. spontanea RcOMT2 mRNA for caffeic acid O-methyltransferase, complete cds... AB086104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="caffetc acid O-methyltransferase"
/protein_id="BAC78827.1"
/db_xref="ca1:32440933"
/tanslation="MGSTGPTQUEDEEANLFAMQLASASVLPWVLKAAIBLDL
LEIMAKAGPGARLSPNDLASQLPTKNPEAPVMLDRM.RLLASYSILTYSLRTLPDGKV
ERLYGLGPVCKFLTKNPEDGVSIAALCLMNQDKVLVESWYHLKDAVLDGGIPFNKAYGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTTCCAAGGTTTCCGTGTTTGTTGCTCTTTCAACTCCTATATCATGGAATTCCTCA 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Full Character (Character) (Ch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rosa chinensis var. spontanea
Rosa chinensis var. spontanea
Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids I; Rosales; Rosaceae; Rosoideae; Rosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="RcOMT2"
/function="catalyzes the S-adenosylmethionine-dependent
O-methylation of cafffeic acid to form ferulic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wu,S., Watanabe,N., Mita,S., Ueda,Y., Shibuya,M. and Ebizuka,Y.
Two O-methyltransferases isolated from flower petals of Rosa
chinensis var. spontanea involved in scent biosynthesis
J. Biosci. Bioeng. 96 (2), 119-128 (2003)
                                                                                                                                                                                                                                                                                                                                              CTCCGGACTCGAGCCTGGCGACGAAGGGGGTGGTCCACATTGACGTCATCATGCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1039 ATAACCCAGGTGGCAAAGAGAGACGACTGAGAAGAGTTTGAGGCTCTGGCCAAGGGTGCTG
                                                                             TCATGAAGTGGATATGCCATGACTGGACGAGCACTGCGTGAAATTTCTCAAGAACT
                                                                                                                                                                                                               genaceaccecrecesaaanesaaaestearastescesastescarrenteses
                                                                                                                                                                                                                                                                                                                                                                                                            ACAACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCG
                                TCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACT
                                                                                                                                                        GCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGT
                                                                                                                                                                                                                                                                                2538 ACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGATGTTGGCCÇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           spontanea'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             petals"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAGCCTTAACTTGTTCTTTATTTCTGATC 1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2718 AGACCGCTTGATCTGCTCCTCTGTGGTGATGTTC 2751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           var.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Rosa chinensis
/mol_type="mRNA"
/variety="spontanea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue type="rose flower
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db xref="taxon:197613"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="RcOMT2"
79. .1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AB086104.1 GI:32440932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fax:81-54-238-4870)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16233496
                                2418
                                                                                          859
                                                                                                                                                        2478
                                                                                                                                                                                                                   919
                                                                                                                                                                                                                                                                                                                                              979
                                                                                                                                                                                                                                                                                                                                                                                                            2598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 13
AB086104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                          8
                                                                                                                                                  8
                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                   /translation="MOSAGETQITPTHVNDBEANLFAMQLASASVLPWILKSALELDL
LEIIAKAGPNAQLSPSDIASQLPTKNPDAAVMLDRMYRLLACYNVLSSSLRTLPDGKI
ERLYGLAPVARYLVKNEDGYSIAPLANANDPKVLMESWYYLTETVLEGGIPFNKAHGM
ERLYGLAPVARYLVKNEDGYSIAPLANANDPKVLMESWYYLTETVLEGGIPFNKAHGM
VSKTBYTGKDARPNKVFNKGAMADHSTINKKILETYTGFEGKSLUVGGGTGAVINTI
VSKTPRIKGINFDLEVVIEEAPSFPGVEHVGGMFVSPKADAVFMKNICHDNSDEHC
VKFLKNCYDALPBOLGKTIVAECILPVAADSSLATKGVVHIDVIMLAHNPGGKERTTEKE
FEALAKGAGFGGFRVCCSAFNSYIMEFLKKP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCG 1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCTCCTCGAGATCATGGCCAAGGACGGCCCGGGCGTTCCTCTCCACGGGGAAATCG 1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGA 2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCCGGCGAGACTCAGATAACCCCTACCCATGTCAACGACGAGGAAGCCAACCTCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCTACTACAGAGATCATCGCCAAGGCCGGCCCTAATGCCCAGCTTTCCCCCTCCGATATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCCACAGCTCCCGACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTCCCAGCTTCCGACCAAGAACCCCGACGCCGCCGTCATGCTGCTCGACGCTGATGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rerredecrecracaacerecreagerecrecerecaaacereceaagaagaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGGCTCTATGGCCTCGCCCCCCTAAATACTTGGTCAAGAAGAAGATGGCGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  crarcecrcaaccrcarcarcascacaacaaccrcarcarcaacaacracracr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACAGAGACAGTTCTGGAAGGAGGGATTCCATTCAACAAGGCACATGGCATGACATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGAGTATCATGGCACCCGCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGAGTACCACGGCAAAGATGCCAGGTTCAACAAGGTGTTTAACAAGGGCATGGCCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTCCACCATCACCATGAAGAAGATTCTCGAGACCTACACCGGCTTCGAGGGCCTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            crercerceargreerescescescescescescercarcacacacarcercraastrace
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    criccarraagggcarraacririgaccrecccargrearigaagagcreccrerrire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
organism="Acacia mangium x Acacia auriculiformis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1408;
                                                                                                                                                        /codon_start=1
/product="caffeic acid O-methyltransferase"
/protein id="AXX6361.1"
/db_xref="G1:68159362"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22.2%; Score 671.6; DB 4; 75.8%; Pred. No. 1.4e-170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches 269;
                             /mol_type="mRNA"
/db_xref="taxon:54177"
                                                                                                                        note="COMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 844;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local
                                                                                              CDS
```

ద

ò

셤 ઠ 염 8 엄 ઠે g

Š

ል ጵ

셤

g ò 요

ઠે

g

ò

a ò g ઠે

ò

```
/gene="comt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'gene="comt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 1339)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52. .1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07 69364, France
                                                                                                                                                                                                                                                                                         2765 TTGAAAGG 2772
                                                                                                                                                                                                                                                                                                                                    1213 GTCATAAG 1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AJ439740
AJ439740.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12123815
                                                                                                                                                                                                  2705
                                                             1033
                                                                                                          2645
                                                                                                                                                                                                                                               1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
RCH439740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                 원
                                               셤
                                                                                                     ઠે
                                                                                                                                         셤
                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAATGTCTGATCACTCCACCATTACTATGAAGATACTGGAAACATACAAGGGCTTC 2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2525 GTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC 2584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             973 ATTCTGCCGGTAGCACCGGACACTAGCCTCGCCACCAAGGGAGTTGTCCATATCGACGTG 1032
                                                                                                                                                                                                                                                                                                                   1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGCCAAGGTCGAGCGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAAC 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAA 2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC 2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG 2404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAG 2464
                VSKYPSIKGINFDLPHVIEDAPQYPGVQHVGGDMFVSVPKGDAIFMKWICHDWSDEHC
LKFLKNCYAALPDNGKVILGECILPVAPDTSLATKGVVHIDVIMLAHNPGGKERTGQE
FEALAKGSGFQGIRVACNAFNTYVIEFLKKI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       972
                                                                                                                                                                                                                                                                                                                                                                                                           GCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGCGCGTTCCTCTCC 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGGCTCACATCGTTGATGTCGAGGCGGCACCGGAGCTGTTAACATGATC 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Grircraagraccerricgarcaaggecarcaacrirgacrigecercargadarcaagar 792
TAFDYHGTDPRFNKVFNKGMADHSTITMKKILETYKGFEGLTSIVDVGGGTGAVVNMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       eggangerinedectriedectaderaciecanichaacenachectriedenacaeniede 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaceccaaagrieaagacereracegrireegacererereraaarrerreaceaagaae 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      433 gaaganggrerecearnecrecrererecres 492
                                                                                                                                                                                                                                                                                                                                                              192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ecrécica a la reconstrucción de la reconstrucció
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTAATGACCTAGCTCTCAGCTTCCGACCAAGAACCCCGAAGCTCCGGTCATGCTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGATGACCGCGTTCGAGTATCATGGCACCCGCGATTCAACAAGATCTTTAACCGG
                                                                                                                                                                                                                            AGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGGACCCAAGTCTCGGACGACGAC
                                                                                                                                                                                                                                                                      AAAATGGGTTCAACCGG---CGAGACTCAGATGACTCCGACCCAAGTCTCCGACGAAA
                                                                                                                                                                                                                                                                                                                   GCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                                                                                                                                                GCCAACCTCTTCGCCATGCAACTCGCCAGGCCCTCCGTCCTCCCCATGGTTCTCAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCATTGAGCTCGACCTCTTGGAGATCATGGCCAAGGCCGGACCCGGAGCGTTCCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1806 ACGGGGGAAATCGCGGCACACACCCAGAACCCCGAGGCACCCGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCCACGTGCACCTCCGCGACCTCCCC
                                                                                                                                                                                 Gaps
                                                                                                                                                                                 4.
                                                                                                                               Score 664; DB 4; Length 1393;
Pred. No. 1.6e-168;
                                                                                                                                                                               0; Mismatches 285; Indels
                                                                                                                                    21.9%;
74.8%;
                                                                                                                                                                                   Conservative
                                                                                                                                                              Similarity
                                                                                                                                                                                   859;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      373 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2106
                                                                                                                                                                                                                                                                                                                        1686
                                                                                                                                                                                                                                                                                                                                                                                                                  1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              313
                                                                                                                                                                                                                                1626
                                                                                                                                                                                                                                                                           92
                                                                                                                                                                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                                                                                                                                                                                                                             193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      253
                                                                                                                                         Query Match
                                                                                                                                                                   Local
                                                                                                                                                                Best Loca
Matches
                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                상 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      දු පු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                                                                                                    જે
```

```
Biosynthesis of the major scent components 3,5-dimethoxytoluene and 1,3,5-trimethoxybenzene by novel rose O-methyltransferases FEBS Lett. 523 (1-3), 113-118 (2002)
                                    1092
2644
                                                                            2704
                                                                                                                   1152
                                                                                                                                                             2764
                                                                                                                                                                                               Arceaertrorcadeaearcreaeracraecraecraerraerregarriteracr 1212
                                                                                                                                                                                                                                                                                                                                                                                      RCH439740 1339 bp mRNA linear PLN 12-JAN-2006
Rosa chinensis mRNA for caffeic acid O-methyltransferase (comtl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids I; Rosales; Rosaceae; Rosoideae; Rosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cock, J.Mark.
Direct Submission
Submitted (25-MAR-2002) RDP, ENSL, 46, allee d'Italie, Lyon cedex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (chanceller, S., Verne, N., Jullien, P.F., Baudino, S., Magnard, J.L., Channellere, S., Verne, P., Dumas, C., Bendahmane, M., Cock, M. and Hugueney, P.

Biosynthesis of the major scent components 3,5-dimethoxytoluene
                             1093 derahagagareragarrirehagaearrekagragarargerrirehaeakeerarere
                                                                              GCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTC
                                                                                                                                                             ATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGAT
ATCATGTTGGCCCACACCCAGGGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AJ439740.1 GI:27527919
Caffeic acid O-methyltransferase; comtl
Rosa chinensis
Rosa chinensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
1. 1339
/organism="Rosa chinensis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /moi_type="mRNA"
/cultivar="0ld Blush"
/db_xref="taxon:74649"
1. _1339
```

```
TAFEYHGTDPRENKVPNRGMADHSTITWKKILLETYKGFEGLTSVVDVGGGTGAVLMMI
SKYPSIKGTNFDLEHVITBAPAYPYGVBHVGGDMFVSYPKGDAIFMKMICHDWSDEHC
LKFLKNCYAALPDNGKVILGECILPYAPDSSLATKGVVHIDVIMLAHNPGGKERTTEQE
FQALAKGAGFGCFNVACSAFNTYVIEPIKKNI
                                                                                                                                                                                                PLN 18-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /trānslation="MGSTGETQMTPTQVSDEEANLFAMQLASASVLPMVLKAAIELDL
LEIMAKAGFGVFLSPTDIASQLPTKNPDAPVMLDRMLRLLASYSILTYSLRTLADGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ERLYGLGPVCKFLTKNEEGVSIAPLCLMNQDKVLLESWYHLKDAVLEGGIPFNKAYGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1707 CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                               Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicotyledons,
rosids, eurosids I, Rosales, Rosaceae, Amygdaloideae, Prunus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genetica Molecular
SPAIN
                                    1066 GCTAAGGGGTCTGGATTTCAAGGCATTCGAGTAGCATGTAATGCTTTCAACACCTATGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGACTCAGATGACCCCAACCCAAGTATCAGATGAAGAAGCCAACCTGTTTGCCATGCAG
               2645 GCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCGTTTCGGCACTCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                Garcia-Mas,J., Messeguer,R., Arus,P. and Puigdomenech,P. The Electronic Plant Gene Register Plant Physiol. 108 (3), 1341-1343 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1268;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/product="caffeic O-methyltransferase"
/protein_id="CAA58218.1"
/db_xref="GI:602588"
/db_xref="GOA:Q43609"
/db_xref="InterPro:IPR001007"
/db_xref="InterPro:IPR001007"
/db_xref="InterPro:IPR001601"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                              PACOMTI 1268 bp mRNA linear
P.amygdalus mRNA for caffeic O-methyltransferase.
X83217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
Submitted (05-DEC-1994) P. Puigdomenech, Dept.
CID-CSIC, Jordi Girona 18-26, 08034 Barcelona,
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 651.8; DB 4;
Pred. No. 3.3e-165;
0; Mismatches 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Prunus dulcis"
/mol type="mRNA"
/cultivar="Texas"
                                                                                                                                                                                                                                               X83217.1 GI:602587
caffeic acid O-methyltransferase
                                                                               2728
                                                                                                             Arcgaartretraagaagarerga 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /sub_species="Batsch"
/db_xref="taxon:3755"
/clone="80MT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tissue_type="root"
clone_lib="root_cDN
                                                                               2705 ATGGAGTTCCTGAAGACCGCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .1268
/gene="comt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="comt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21.5%;
                                                                                                                                                                                                                                                                                  Prunus dulcis (almond)
Prunus dulcis
                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 1268)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18. .1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                    12228545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Simi
Matches 820;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1647
                                                                                                               1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33
                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
JOURNAL
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                 RESULT 1
PACOMT1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                  LOCUS
                                       요
                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                               1685
                                                                                                                                                                 1745
                                                                                                                                                                                                                                                                                                   1865
                                                                                                                                                                                                                                                                                                                                                                                                                                     1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1065
                                                                                                                                                                                                                                                                                                                                                                     1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2524
                                                                ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAA 2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC 2584
                                                                                                                                                                                                                                                                                                                                                                                                      345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               825
                                                                                                                                105
                                                                                                                                                                                                                                                                225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAGATGCAATTTTCATGAAGTGGATATGTCACGACTGGAGTGACGAGCACTGCTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAATGGGTTCGACCGGGCTCCGAGACCCCAGATGACCCCGACCCAAGTCTCGGACGACGAG
                                                                                                                              AAAATGGGTTCAACCGG----CGAGACTCAGATGACTCCGACCCAAGTCTCCGACGAGA
                                                                                                                                                                                                  GCCAACCTCTTCGCCATGCAACTCGCCAGCGCCTCCGTCCTCCCCATGGTTCTCAAAGCC
                                                                                                                                                                                                                                 GCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGTTCCTCC
                                                                                                                                                                                                                                                                  GCCATTGAGCTCGACCTCTTGGAGATCATGGCCAAGGCCGGACCCGGCGCGCTTCCTCCC
                                                                                                                                                                                                                                                                                                   ACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCCGAGGCACCCGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                    ceraargacerageerereageireegaceaagaaceegaagereeagicargerraae
                                                                                                                                                                                                                                                                                                                                                                     CGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                    cégargerricecerreresceaecraerecearreraeceraerecerresceraecaerre
                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACGGCAAAGTTGAGAGGCTCTACGGTTTTGGGACCTGTGTGTAAATTCTTGACCAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGATGACCGCGTTCGAGTATCATGGCACCCGACCCGCGATTCAACAAGATCTTTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAÁTGACTGCTTTTGATTACCATGGAACTGACCCTAGATTCAACAAGGTCTTCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAATGGCTGACCACCATTACCATGAAGAAATCCTTGAGACTTATAAAGGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGCCTCACATCCTTGATGTCGGAGCCGCACCGGAGCTGTTGTTAACATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTCTAAGTACCCTTCGATCAAGGCCATCAACTTTGACTTGCCTCATGTGATCGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTCCTCAATATCCTGGTGTACAACATGTTGGAGGGGACATGTTTGTAAGTGTACCGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rrcrrgaagaarrgcrargcgcgcrrccagacaargggaaagrgarrcrrggrgagrgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 946 ATTCTGCCGGTAGCACCGGACACTAGCCTCGCCAAGGGAGTTGTCCATATCGACGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2585 ATCATGTTGGCCCACACACCCAGGCGGGAAAGAGAGACACACAGAAGGAGTTCGAGGCATTG
                                                                 Gaps
                                                                 4
                               Length 1339;
                                                                 Indels
                               Score 663.2; DB 4;
Pred. No. 2.6e-168;
0; Mismatches 258;
                                                              0; Mismatches
                                21.9%;
                                                                Conservative
                                              Similarity
                                              Best Local Sim
Matches 842;
                                                                                                                                                                                                                                                                                                   1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2525
                                                                                                 1626
                                                                                                                                49
                                                                                                                                                                 1686
                                                                                                                                                                                                  106
                                                                                                                                                                                                                                 1746
                                                                                                                                                                                                                                                                166
                                                                                                                                                                                                                                                                                                                                    226
                                                                                                                                                                                                                                                                                                                                                                     1866
                                                                                                                                                                                                                                                                                                                                                                                                      286
                                                                                                                                                                                                                                                                                                                                                                                                                                       1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               886
                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2405
ORIGIN
                                                                                                                            g
                                                                                                                                                                                              g
                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                성 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      윰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ሯ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                 ð
                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                   ઠે
```

time : 17311.4 secs

8 &

```
Job
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTC 2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGATATGCCATGGACTGGAGGACGATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC 2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2546 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGTTGGCCCACAACCCA 2605
                                                                                                                                                                                                                                       2126
                                                                                                                                                                                                                                                                               2186
                                                                                                                                                                                                                                                                                                                                                               GATGTCGGAGGCGGCACTGGGGCCGTGCTCATGATCGTTGCCAAATACCCATCAATG 2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          872
                                                                                                                                                                                               GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT 2066
                                                                                                                                                                                                                                                                                                                      ATTACTATGAAGAATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCCAAGGTCGAGCGGCTC 1946
                                                                                                                                                       TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                          753 GAGCATGTTGGGGGAGACATGTTTGTAAGTGTTCCAAAAGGAGATGTTCATGAAG 812
                               GAGATCATGGCCAAGGACGGGCGGGCGCTTCCTCTCCACGGGGAAATCGCGGCACAG 1826
                                                                                                                                                                                                                                                            512
                                                                                                                                                                                                                                                                                                                                          Arcaccardadababarccirdagacaracdabagggrirgagggcricacarcagregig 632
                                                                                                                                                                                                                                                                                                                                                                           332
                                                   212
Tragecagegeetetgitetgeecatgetgettaaggeagecatagagettgacettg 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gecrirccaagrcargrececrirrcescacrcacercarsaagrecragaagaccecr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTCGCCAAAGGGGCCGGATTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                               2366 AAGCACGICGGAGGCGACAIGITCGICAGCGIICCAAAGGGAAGAIGCCAITITCAIGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   creccaaccaagaacecagargeacrereargerreacecargrigited
                                                                                                                                                                   geggrectropaggeggaarecearreaacaaggegracgggargacggerreagraar
                                                                                                                                                                                                                                                            GCAGTTCTTGAAGGTGGCATTCCATTCAAGAGGCCTATGGAATGACTGCTTTTGAATAT
                                                                                                                                                                                                                                                                               CATGGCACCGACCTCACAAAAATCTTTAACCGGGGAATGTCTGATCACCTCCACC
                                                273 AGCTACTCTATTCTCACTTACTCTCTGCGCACCCTGGCTGATGGTAAAGTTGAGAGGCTC
                                                                       CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGA 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGA 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1113
                                                                                                                                                                                                                                                                                                                                                                                                            2307
                                                                                                213
                                                                                                                                                                                                                       393
                                                                                                                                                                                                                                                                                  2127
                                                                                                                                                                                                                                                                                                                            2187
                                                                                                                                                                                                                                                                                                                                                                     2247
                                                                                                                    1887
                                                                                                                                                            1947
                                                                                                                                                                                                   2007
                                                                                                                                                                                                                                            2067
                                                                                                                                                                                                                                                                453
                                                                                                                                                                                                                                                                                                       513
                                                                                                                                                                                                                                                                                                                                                573
                                                                            1827
                 93
                                                        153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                               6 B 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 상
음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                           8 6 8 6
                                                                                                                                                                                                                                      ठ हे ठ
                                                                     6 B 6 B 6
                                                                                                                                                                            8 8 8
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                          g
```

Search completed: November 1, 2006, 11:25:45

```
October 31, 2006, 23:17:03 ; Search time 1281.86 Seconds (without alignments) 16480.672 Million cell updates/sec
                                                                                                                                                                                                                                  1 cacctgttcagtttgattcc.......3cttcgaacaaaaaaaa 3030
                                                                                                                                                                                                                                                                                                                                                                        10489840
GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                 5244920 segs, 3486124231 residues
                                                                                                                                                                                      US-10-702-319A-113_COPY_41_3070
3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                          - nucleic search, using sw model
                                                                                                                                                                                                                                                                      IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genesequ2000s:*
genesequ2001as:*
genesequ2001bs:*
genesequ2002as:*
genesequ2002bs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  geneseqn2003cs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        geneseqn2004as:*
geneseqn2004bs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    geneseqn2003ds:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 geneseqn2003bs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            geneseqn2005s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 geneseqn2006s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  geneseqn1980s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N Geneseq 8:*
                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                  Perfect score:
                                                                            OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database :
                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                 Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Abk17109 Bucalyptu	Adh75529 Eucalyptu	Adw80563 E. grandi	Aac62810 O-methyl	Abk17075 Eucalyptu	Adh75476 Eucalyptu	Adw80510 E. grandi	Aaa68014 Eucalyptu	Add41764 O-methyl	Aal60735 Strawberr	Aac62762 O-methyl	Abk17027 Eucalyptu	Adh75428 Eucalyptu	Adw80462 E. grandi	Abk48067 cDNA enco	Add93899 Quaking a	Aax26295 Aspen bis	Aaq38448 pPLC4 cod
SUMMARIES	ΠD	ABK17109	ADH75529	ADW80563	AAC62810	ABK17075	ADH75476	ADW80510	AAA68014	ADD41764	AAL60735	AAC62762	ABK17027	ADH75428	ADW80462	ABK48067	ADD93899	AAX26295	AAQ38448
	DB	9	10	14	ო	9	10	14	e	10	σ	ო	9	10	14	9	10	Ņ	~
	* Query Match Length DB	3070	3070	3070	2096	2096	2096	2096	1630	1630	1876	199	199	199	661	1501	1503	1503	1368
	% Query Match	100.0	100.0	100.0	66.7	66.7	66.7	66.7	47.2	47.2	22.3	21.1	21.1	21.1	21.1	20.8	20.8	20.8	20.4
	Score	3030	3030	3030	2020.4	2020.4	2020.4	2020.4	1429.6	1429.6	9/9	638.2	638.2	638.2	638.2	631	631	629.4	618.2
	Result No.	1	7	m	4	S	9	7	80	6	10	11	12	13	14	15	16	17	18

8 66 6 4 77 98	AbsS4111 Tobacco c Aaq38450 OMTI codi Adq88320 Eucalyptu Aaq38449 pOMTI.A a Adc68550 S. arundi
10 AAD47178 2 AAV71042 6 AAD27040 10 AD129673 12 AAX81875 2 AAX81875 3 AAC40838 3 AAC40838 3 AAC40838 12 AAC79059 12 AAC77692 4 AAD19546 2 AAX35662 3 AAX3285	ABSS4111 AAQ38450 3 ADQ88320 AAQ38449 0 ADC68550
	1507 6 1431 2 485 1 1244 2 1452 1
2000.000.000.000.000.000.000.000.000.00	17.3 17.2 16.0 15.8 15.7
6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	523 519.8 478.8 475.4
0 0 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	14444 12444 1544

ALIGNMENTS

RESULT 1 **ABK17109**

Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; ss; PCR primer. Eucalyptus grandis promoter polynucléotide #51. (GENE-) GENESIS RES & DEV CORP LTD. (FLET-) FLETCHER CHALLENGE FORESTS IND LTD. Lasham A; BP. Eagleton C, ABK17109 standard; cDNA; 3070 20-JUN-2001; 2001WO-NZ000115. 20-JUN-2000; 2000US-00598401. 28-NOV-2000; 2000US-00724624. (first entry) Eucalyptus grandis. Rice S, WO200198485-A1. 26-MAR-2002 27-DEC-2001. Perera R, ABK17109;

WPI; 2002-114583/15.

Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.

Claim 1; Page 103-104; 121pp; English.

The invention relates to isolated promoter sequences from Pinus radiata and Eucalyptus grandis, comprising a sequence chosen from leaf-, root-, flower-, pollen-, bud-, meristem-specific promoters or temporally

regulated promoters such as xylogenesis-specific promoters. The promoter copolypeptides and their related polymucleotides are useful in the production of genetic constructs, used for modifying gene expression in a target organism, in particular a plant. The method is useful for modifying expression of a polymucleotide that comprises an intron cequence, through removal of the intron sequence. The method is useful comparison to the intron sequence. The method is useful comparison to the intron sequence are useful in genome and physical mapping, in positional companies in various assays to determine biological activity, to cloning of genes, in various assays to determine biological activity, to raise antibodies, to isolate corresponding interacting proteins and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABK17125 represent Pinus radiata and Eucalyptus grandis polynucleotides and PCR primers used in the method coffice the invention 858888888888888888

유

ઠે

g ઠે

8

829 A; 718 C; 755 G; 768 T; 0 U; 0 Other; Sequence 3070 BP;

원 ò g 8 g ò

> 760 780 820 520 540 580 600 640 99 700 720 420 460 480 TAGTCCTTTAGAAAGTCCCCTTCCACCCTATCATAGGCTTTCTGCATATCCATTTAAGA 300 360 400 120 160 180 220 240 100 ATTAAAATATTGTCCTGAATTTGACGTCCACTGACAAAAGGGGCTTTGCTCCTGGAAATA AGTACAGGCAGTAGGCTTAAGGCGATTGGCAATCACCTTAGAAATGATCTTATATGCG TAATTACAAAGACTGATGGGGGGGGTATTGGTCTAATTGTTCAGGATGTGGTACCTTGGGT **ATTAGGGCTATGATTGGATTGAGATTCGGTGGTATGATGCCAGAATTAAAAAGTGC** TGCACTGATGAGAATAGTTCATCCTGGAGTATATCCCAATGATGCTGGTAGAAGAGTCCA TTCAAGCCATCTGGACCGGGGCCTTGGTAAGTCCCAGTTGGAAAGTAGCTCTTAACT GATAATAGATTCACCAGAGGATAAAAAGGTAGGGAGATAAGGGGATCTCCCCGTCTGATG ACAGCCCGGAATTGACGTCTACATTTCTGACTTTAAATTGATGTAGAACCTCTTAGACT CCTCGGGTAGGTTGAAAATAAGGCAAAAGTTCGCCGTTGAATTTTGACAGCAAAAGACACC GTCGTTATGCATTGCATCCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGA CACCTGTTCAGTTTGATTCCCTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGG Gaps ö DB 6; Length 3070; 0; Indels Query Match
> Best Local Similarity 100.0%; Pred. No. 0;
> Matches 3030; Conservative 0; Mismatches 341 701 721 191 481 521 541 581 601 641 661 241 301 361 401 421 461 161 ч 41 61 101 121 181 221

셤 ò g 8 ద 8 음

g ò

δ

a

ò

임

셤 ሯ a ò

ઠે

ద ò g à 유 Š 셤

g ò g ò

임 8 원

g δ

ò 셤 ò

δ 요

340	900	1000	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860
rgatgtgaaaag rgatgtgaaaag	TGATTGTCATCC	atgaaaaaatta atgaaaaattta	CCAAAATTATTCT	rgatgcgccatgt rgatgcgccatgt	rgcaagctgacga rgcaagctgacga	AAAGAGCACGACC 	tattaatttaaca tattaatttaaca	CCCTGATTAATTT 	GAGAGAGAGAGAG GAGAGAGAGAGA	GGAGTCAATGGCA GGAGTCAATGGCA	GGGTTGGTGAACC	rcccaccattal rcccaccatta	agagaagaggag agagaagagaggag	CCAAGTCTCGGAC(CCAAGTCTCGGAC(CCCCATGGTCCTAA 	GCCGGGGGGTTO	101 TCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGC 18
cccacrgrcrgaaa cccacrgrcrgaaa	GCGCACCCAAGCTTG GCGCACCCAAGCTTG	STATAGTTGTTGC 	aggggacatcgc agggggacatcgc	ggtaagtaaccaa ggtaagtaaccaa	stiggigcaaatt stiggigcaaatt	ttgcaaagagcac ttgcaaagagcac	ccagtaagggtaa ccagtaagggtaa	CACTTCCATAAAC 	GATGTCATCCCA(TGGTTCACCGGTT 	atattttgcggg atattttgcggg	racctcacttcaa' racctcacttcaa'	rctcgcggaagag rctcgcggaagag	AGATGACCCGAC AGATGACCCCGAC	aceccrccerecr 	TGGCCAAGGACGG TGGCCAAGGACGG	cccagaaccccga
AGTCTCGATGTCC AGTCTCGATGTCC	aatttcaggatc 	GTTGTTGTCTTTC 	GCCATTTAATTC GCCATTTAATTC	TTTCTCTTTTA(GATCTTGGAGTT GATCTTGGAGTT	rgccaaccaga rgccaaccaga	TCACCAGATCGG TCACCAGATCGG	CCGTATTTCTCT 	ccacaaaggica cacaaaggica	rcrcrcrararrc 	SGTGTAGGGTCC2 	CCTCCACCACCA' 	CCTTTGCTCGAG' 	GCTCCGAGACCC 	rgcagctggcga rgcagctggcga	TCCTCGAGATCA TCCTCGAGATCA	scacagetecega scacagetecega
SAATAGGCAAGT/ SAATAGGCAAGT/	TCGTCATCTTCAAAATTTC TCGTCATCATCTTCAAAATTTC	TAATCTTGTTTC TAATCTTGTTTC	CCCCCAGCTGA CCCCCAGCTGA	ataactgtcgaa 	GCTGATTAGTAT 	GGGAAATTAAGG GGGAAATTAAGG	TTAACAAGATCA TTAACAAGATCA	rgtaccgggaact rgtaccgggaact	scgacagccaacc 	agagagagttt: sagagagagttt:	AATGTACATATTO	CTATATATCGAA CTATATATCGAA	TTCCTCTGCTTT TTCCTCTGCTTT	regerreacee regerreacee	ACCTCTTCGCCA 	TCGAGATCGACC TCGAGATCGACC	gggaaatcgcgc gggaaatcgcgg
CACTGGTTCA(TAACCTATCG	TGCAACATAC TGCAACATAC	GTATTTTGT GTATTTTTGT	rcrrgcrgcc rcrrgcrgcc	TGACAAAAAG TGACAAAAAG	TGGCCCCTCP TGGCCCCTCP	CAACCTTTCC	AATAGCTCT	GGTGGGAAA(GGTGGGAAA	AGAGAGAGA AGAGAGAGA	1 TGCGTGACG 1 TGCGTGACG	1 GCAAAGTTC 1 GCAAAGTTC	CCGTTTTAT CCGTTTTAT	1 AGGAGAGAA 1 AGGAGAGAAA	1 ACGAGGCGA 1 ACGAGGCGA	1 AGGCCGCCA 1 AGGCCGCCA	1 TCTCCACGG
781	841	901	1001	1021	oo ∩	4 0	O 4		1321	1381	1441	1503	1567	162	168	174	180

g ð 셤 8 g ð

d à m

셤

8 6 ò g ઠે 임 ð 8 ò g Š

```
Pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACCTGTTCAGTTTGATTCCCTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATAATAGATTCACCAGAGGATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATAATAGATTCACCAGAGGGATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCGGGTAGGTTGAAAATAAGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACCTGTTCAGTTTGATTCCCTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to a new isolated polynucleotide comprising the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New polynucleotide of the superubiquitin promoter from Pinus radiata, useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 10; Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                Monterey pine; superubiquitin; promoter; gene expression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                  Eucalyptus grandis superubiquitin related sequence #49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perera
                                                                 TCAGTAAATCACTTCGAACAAAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 3030;
llarity 100.0%; Pred. No. 0;
Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; SEQ ID NO 113; 123pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Visser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEV CORP LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENESIS RES & DEV CORP LI
RUBICON FORESTS HOLDINGS
                                                                                                                                                       BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wood M, Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                      30-APR-2003; 2003WO-NZ000076.
                                                                                                                                                        DNA; 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-APR-2002; 2002US-00137036
                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-903678/82.
                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                             Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                 transgenic plant.
                                                                                                                                                                                                                                                                                                                                                           WO2003093475-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Simi
Matches 3030;
                                                                                                                                                                                                                   22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                        13-NOV-2003
                   2981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               83,
                                               3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        221
                                                                                                                                                        ADH75529
                                                                                                                                                                                       ADH75529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GENE-)
(RUBI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rice
                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                     2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2460
                                                                                                                                                                                                                                                  2160
                                                                                                                                                                                                                                                                                                                                                                                                                                      2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2920
                                                                                                                                                        2080
                                                                                                                                                                                                                   2140
                                                                                                                                                                                                                                                                                2200
                                                                                                                                                                                                                                                                                                                                           2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TIGHTHITTATGICTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTA 2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2941 ACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTTT 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGACCGGATCTTCCGGCTGCTGGCTACTCCGTGCTCACGTGCACCCTCGGGACC
                                                                 TCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCA
                                                                                 TCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCA
                                                                                                                            AGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA
                                                                                                                                            TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG
                                                                                                                                                                                                        CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTA
                                                                                                                                                                                                                                                                   CGTACGGGGTGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTA
                                                                                                                                                                                                                                                                                                             ACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                                                                                                                                                                                                                                                                                                                           ACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                                                                                                                                                                                                                                                                                                                                                           GCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGCCACTGGGGCCCGTGCTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                         GCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGGAGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGTICCTCAAGAACTGCTTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGCATCATGTTGGCCCACACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGAT
                                                                                                                                                                                                                                                                                2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2921
                                 1901
                                                               1921
                                                                                              1961
                                                                                                                            1981
                                                                                                                                                        2021
                                                                                                                                                                                       2041
                                                                                                                                                                                                                   2081
                                                                                                                                                                                                                                                  2101
                                                                                                                                                                                                                                                                                                                                            2201
                                                                                                                                                                                                                                                                                                                                                                                                         2261
                                                                                                                                                                                                                                                                                                                                                                                                                                       2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2881
                                                                                                                                                                                                                                                                                                              2161
                                                                                                                                                                                                                                                                                                                                                                           2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2821
```

g

g

ò

8 8

g

ઠે

8 8 8

q

ò

중 음

a

ò g ठ a

셤 ò 셤 ઠે

ठे

ö

ø

æ

100

9

120

160 180

6 m 6 m 6 m 6 m 6 m 6 m 6 m 6 m 6 m 6 m
14. TAGECCITTAGAMATICCONTCOACCTACANAGCTITCTCANTCOATTITAMA 310 28. TAGACCCCCCANTCOACCTACANCCTACANAGCTITCTCANTCATTITAMA 310 38. TATAGAMATICCCCTACANCTACANCTACACTACANATACANCTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACANATACTACTACACTACANATACTACTACACTACANATACTACTACACTACACTACACTACACTACANATACTACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTACACTAC

셤

ઠે

g 8 요 8 g Š 셤 8 8 ઠ 셤 8 g ઠે g ò

8

```
TAATTACAAAGACTGATGGGGGGGGTATTGGTCTAATTGTTCAGGATGTGGTACCTTGGGT 540
                                                                                                                                                                                                                                                                                                                                                                The invention relates to a novel isolated polynucleotide sequence comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (COMT) promoter (ADW806462 or ADW80563). Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADW80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used in the exemplification of the invention.
                                                                                                                                                                                                                                                        New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACCIGITCAGITIGATICCCITGAGATGACCTACAGAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATAATAGATTCACCAGAGGATAAAAAGGTAGGGAGATAAGGGGATCTCCCCGTCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCGGGTAGGTTGAAATAAGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCGTTATGCATTGCATGATCCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGTCCTTTAGAAAGTCCCATTCCACCCTATCATAGGCTTTCTGCATATCCATTTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CACCTGTTCAGTTTCATTCCCTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCGGGTAGGTTGAAAATAAGGCAAAAGTTCGCCGTTGAATTTTGACAGAAAAGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGTTATGCATTGCATCCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGTCCTTTAGAAAGTCCCATTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAGCCCGGAATTGACGTCTACATTTTCTGACTTTAAATTGATGTAGAACCTCTTAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGCCCGGAATTGACGTCTACATTTCTGACTTTAAATTGATGTAGAACCTCTTAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTAAAATATTGTCCTGAATTTGACGTCCACTGACAAAAGCGCTTTGCTCCTGGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTACAGGCAGGTAGGGCTTAAGGCGATTGGCAATCACCTTAGAAATGATCTTATATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 14; Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 3030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No.
                                                                                                                                                                                                                                                                                                                                     Claim 2; SEQ ID NO 113; 82pp; English.
                                                                                                                                GENESIS RES & DEV CORP LTD. RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                       Eagleton CK;
                   28-NOV-2000; 2000US-00724624.
09-NOV-2001; 2001US-0345397P.
30-APR-2002; 2002US-03137036.
08-NOV-2002; 2002US-00291447.
08-NOV-2002; 2002US-0425087P.
2000US-00598401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 100.
Matches 3030; Conservative
                                                                                                                                                                                       Rice SJ,
                                                                                                                                                                                                                          WPI; 2005-131806/14
                                                                                                                                                                                       а,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                  (GENE-)
                                                                                                                                                   (RUBI-)
                                                                                                                                                                                         Perera
   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2880
                                                                                                                                                                                                                                                                2700
                                                                                                                                                                                                                                                                                                2740
                                                                                                                                                                                                                                                                                                                                       2760
                                                                                                                                                                                                                                                                                                                                                                         2800
                                                                                                                                                                                                                                                                                                                                                                                                               2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3040
   AAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGC
                                        GAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGA
                                                                          GAAGTICCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGA
                                                                                                                GTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGA
                                                                                                                                    GTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGA
                                                                                                                                                                                                            CTGCATCATGTTGGCCCACACACCCAGGGAAAGAGAGAAAGAGGACACAGAAGGAGTTCGAGGC
                                                                                                                                                                                                                                                                                                  Arresceaaassecessarrreassecrrecaasrearsersecerrressecaerea
                                                                                                                                                                                                                                                                                                                                     CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                          CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                               GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                        GGATTTGAAAGGTCGTGAAGGACCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCGAAGTGGAAGTTACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGGAAGTTACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TIGITGITITATGICIATAAAGITITIGAGICTICIGCATACIGATITICACAGAAIGIGIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIGHTHITTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGAAACGCCGTATATGGATGTGCCTGAATGGATGGAATTGTGATATTCTGTCTTCTTTT
                                                                                                                                                                                                                                                                ATTGGCCAAAGGGCCCGGATTTCAGGCCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ss; wood; plant; transcription; caffeic acid O-methyltransferase;
transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      grandis caffeic acid O-methyltransferase cDNA SEQ ID NO:113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAGTAAATCACTTCGAACAAAAAAAAA 3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
1. .1643
/*tag= a
1019. .1676
/*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard; cDNA; 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-00276599.
99US-0146591P.
2000WO-NZ000018.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US2005026162-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-MAR-1999;
30-JUL-1999;
24-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        06-NOV-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-FEB-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3041
                                                                          2501
                                                                                                                                                                                                                          2621
                                                                                                                                                                                                                                                                                                2681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADW80563
                                        2461
                                                                                                                                                   2561
                                                                                                                                                                                                                                                                                                                                                                       2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2861
                                                                                                                2521
                                                                                                                                                                                       2581
                                                                                                                                                                                                                                                                2641
                                                                                                                                                                                                                                                                                                                                       2701
                                                                                                                                                                                                                                                                                                                                                                                                             2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADW80563
```

ö

120

160 180 220 240

100

9

280

300 340 360 400 420

460

```
161
                                                                                                   1159
                                                                                                                                                                                                                        401
                                                                                                                                                                                                                                                                                          521
                                                                                                                                                                                                                                                                                                          1515
                                                                                                                                                                                                                                                                                                                                                                             1635 '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1001
                                 1039
                                                                  1099
                                                                                                                                    1219
                                                                                                                                                                     1279
                                                                                                                                                                                                       1339
                                                                                                                                                                                                                                                                                                                                           1575
                                                                                                                                                                                                                                                                                                                                                                                                               1695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1875
979
                41
           g
                                             요 장
                                                                               g
                                                                                                               g
                                                                                                                                                 ద
                                                                                                                                                                                  셤
                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     원
                               ò
                                                                                                  ò
                                                                                                                                   Š
                                                                                                                                                                    ò
                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
ŝ
                                2820
                                                 2860
                                                                  2880
                                                                                                                                    3000
                                                                                  2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The sequences may also be used to tag or identify an organism or its
                                                                                                                                    TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGAT
                                                                                                           TIGHTHINITATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAGATGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  plant
 CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
          CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                              TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGAT
                                                                                                   TTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  oŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel promoter sequences useful for modulating transcription sequences of interest and production of polypeptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 3;
                                                                                                                                                                                                                                                                                  O-methyl transferase promoter coding sequence #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T; 0
                                                                                                                                                                                                                                                                                                   Promoter; eucalyptus; pine; gene transcription;
                                                                                                                                                                      TCAGTAAATCACTTCGAACAAAAAAAA 3030
                                                                                                                                                                               3041 TCAGTAAATCACTTCGAACAAAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 2020.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            G; 485
                                                                                                                                                                                                                                                                                                                                                                                                              (GENE-) GENESIS RES & DEV CORP LTD.
(FLET-) FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2096 BP; 537 A; 535 C; 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 1; Page 61-62; 93pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                        Eagleton CK;
                                                                                                                                                                                                                                 ВР
                                                                                                                                                                                                                                                                                                                                                                     24-FEB-2000; 2000WO-NZ000018.
                                                                                                                                                                                                                                 AAC62810 standard; DNA; 2096
                                                                                                                                                                                                                                                                                                                                                                                     99US-00276599
99US-0146591P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 99.3%;
Matches 2041; Conservative
                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ведиепсев may also be
reproductive material
                                                                                                                                                                                                                                                                (first
                                                                                                                                                                                                                                                                                                                                                                                                                                        Perera R, Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-647236/62
                                                                                                                                                                                                                                                                                                                   Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; AAB28142
                                                                                                                                                                                                                                                                                                                                    WO200058474-A1
                                                                                                                                                                                                                                                                                                                                                                                     25-MAR-1999;
30-JUL-1999;
                                                                                                                                                                                                                                                                 02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                     05-OCT-2000,
                2741
                                                                  2821
                                                                                  2861
                                                                                                                   2921
                                                                                                                                                                     3001
2701
                                 2761
                                                 2801
                                                                                                   2881
                                                                                                                                                                                                                                                AAC62810
                                                                                                                                                                                                                 RESULT
               셤
                               ò
                                             셤
                                                             ठे
                                                                               ద
                                                                                             8
                                                                                                               ద
                                                                                                                                    ò
                                                                                                                                                   셤
                                                                                                                                                                     ઠે
                                                                                                                                                                                   g
                                                                                                                                                                                                                                 δ
```

ij

Gaps

4

Indela

11;

```
1098
                                                                                                                                                1158
                                                                                                                                                                                                                            1218
                                                                                                                                                                                                                                                                                                       1278
1038
                                                                                                                                                                                                                                                                                                                                                                                1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                460
                                                                                                                                                                                                                                                                                                                                           340
                                                                                                                                                                                                                                                                                                                                                                                                                      400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   940
                                                                                               GTATGATCTTGGAGTTGTTGGTGGTAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                         281 ATCATCACCAGATAGGCTAATATTAATTAATAATAATAAGGTCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               881 GTCGCGGCCCAGCTCCCGACCCCAAGCCCCGAGGCACCCGTCATGCTCGACCGGATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              941 CGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCGAGCGGCTCTACGGCTCGGGGGGGGGGGAGTTCTTGGTCAGAACGAGGACGGG
                                                                       CGAAITTTCCTTTTAGGTAAGTAACCAATGATGACGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                 221 AAGGGGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                      341 AACTCCGTATTTCTCTCTCATCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1395 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         461 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1455 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1815 ATCGCGGCACCACCACACACACACACACACCCCACACCCCTCATGCTCGACCGGATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCTCCATCGCCGCACTCAACTTGAACCAGGACAAAATCCTCATGGAAAGCTGGTAT
                       CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTCTTGCTGCCATAACTGT
                                                                                                                                                    GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                              AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                       ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGCTTTCCTTTGCTCGAGTCTCGCGGAAGAGAGAAGAGAAGAGAGAAGAATGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1755 ATCGACCTCCTCGAGATCATGGCCAAGGACGGCCCCGGGCGCGTTCCTCCTCCACGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1061
```

(first entry)

```
Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; ss;
                                                        Eucalyptus grandis promoter polynucleotide #31.
                                                                                                                                                                                                                                                                   20-JUN-2001; 2001WO-NZ000115.
                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2002-114583/15.
                                                                                                                                                                                                                                                                                                                                                                                                       Perera R, Rice S,
                                                                                                                                                                 Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; AAU80760
                                                                                                                                                                                                   WO200198485-A1
                                                                                                                                                                                                                                                                                                     20-JUN-2000;
28-NOV-2000;
                            26-MAR-2002
                                                                                                                                                                                                                                   27-DEC-2001
                                                                                                                                   PCR primer.
                                                                                                                                                                                                                                                                                                                                                     (GENE-)
(FLET-)
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccesarircasscriccaasrcarsrscrscscrircsscricacsrcasscrica 1780
                                                                                                                                                                                                                                                                         2354
                                                                                                                                                                                                                                                                                                       1420
                                                                                                                                                                                                                                                                                                                                                                          1480
                                                                                                                                                                                                                                                                                                                                                                                                          2474
                                                                                                   1240
                                                                                                                                                                     1300
                                                                                                                                                                                                       2294
                                                                                                                                                                                                                         2174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTTGAAAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rcaacaccerrearcrecrerereresearerrearesrerrearrantearringaarringaaadere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTTTATGT
                                                                                                                                                                                                                                                                                                 trecreststranscaestresanssassas trecreses en trecreses en trecres es en trecres en trecre
                                                                                                                                                                                                                                                                                                                                                                                                          TTTTCATGAAGTGGATATGCCATGACTGAGGACGACCATTGCGCGAAGTTCCTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                              ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCACTCCACCATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTC
                                                                                                                                                        TTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGGCGTTCCAAAGGGAATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCACAACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAAGGGG
                                                                                                                                                                                                         GAGACCGTGGTCGATGTCGGAGGCGCCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAA
                                                                   GCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCT
                                                                                                 gegricgagrarcargecacegegarreaacaagarerraacegegaargrer
                                                                                                                                                                                                                                                                       TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCC
 TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCCATTCAACAAGGCGTACGGGATGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAACAAAAAAAAAA 3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAACAAAAAAAAA 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1661
                                                                                                                                                                              1241
                                                                                                                                                                                                                                            1301
                                                                                                                                                                                                                                                                                                                                                 2355
                                                                                                                                                                                                                                                                                                                                                                                1421
                                                                                                                                                                                                                                                                                                                                                                                                                   2415
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1481
                                                                                                                                                                                                                                                                                2295
                                                                                                                                                                                                                                                                                                                 1361
                                                                          2115
                                                                                                            1181
                                                                                                                                            2175
                                                                                                                                                                                                              2235
          2055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                   ð
                                                                                                                                                                          셤
                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                         à
                                                                                                     8
                                     셤
                                                                            ò
```

FLETCHER CHALLENGE FORESTS IND LTD.

& DEV CORP LTD.

GENESIS RES

2000US-00598401. 2000US-00724624.

Lasham A;

Eagleton C,

```
The invention relates to isolated promoter sequences from Pinus radiata and Bucalyptus grandis, comprising a sequence chosen from leaf-, root-, flower-, pollen-, bud-, meristem-specific promoters or temporally cregulated promoters such as xylogenesis especific promoters. The promoter copyracted promoters. The promoters and their related polyuncleotides are useful in the production of genetic constructs, used for modifying gene expression in a crayet organism, in particular a plant. The method is useful for modifying expression of a polyuncleotide that comprises an intromandifying expression of a polyuncleotide that comprises an intromandifying growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional cloning of genes, in various assays to determine biological activity, to craise antibodies, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABK17016-ABK17125 represent Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1099 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAGGCTGACGATGCCCCTCAGGGAAATT 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1159 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Grandancirideadriciriderectaarirideaagcidaceardecectroadeaarir 220
Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   979 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAATTITCICITITIAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66.7%; Score 2020.4;
ilarity 99.3%; Pred. No. 0;
Conservative 0; Mismatches
                                                                                                                                             Claim 1; Page 78; 121pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sest Local Sim:
Matches 2041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

standard; cDNA; 2096 BP

ABK17075

ABK17075 ID ABK1 XX RESULT 5

```
CCCACAACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGGATTICAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCCACGTCATGCAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Trccrestroaascacercesasscarctrcrcrasscaracteca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTGCTACGATGCGCTTCCCCAACGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCCTGGTGTCAAGCACGTCGGAGGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGACCGTGGTCGATGTCGGAGGCGGCACTGGGCCGTGCTCAGCATGGTCGTTGCCAAA
                                                                                                                                                                                                                                                                                                                                 Gregaciogereracioneraciones de la contracamenta del contracamenta de la contracamenta del contracamenta de la contracamenta del contracamenta de la contracamenta del contracamenta de la c
                                                                                                                                                                                                                                                                                                                                                                                                                          1001 GICGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGTTCGACTATCATGCCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCACTCCACCATTACTATGAAGATACTGGAAAACATACAAAGGGCTTCGAGGGCCTC
                                                                                                                                  ATCGCGGCACAGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTC
                                                                                                                                                                                                                                                                                                                                                      GTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTAT
TCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTC
                                                         TTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCTAAAGGCCGCCATCGAG
                                                                                                                                                                                   GTCGCGGCCCAGCTCCCGAAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1001
                                                                                                                                                                                                                                                                    1815
                                                                                                                                                                                                                                                                                                                                           1875
                                                                                                                                                                                                                                                                                                                                                                                                                1935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1995
                                                                                                                                                                                            1755
                                                                                                                                                                                                                               821
                                                                                                                                                                                                                                                                                                        881
                                                                                                                                                                                                                                                                                                                                                                              941
                                              1635
                                                                              701
                                                                                                                     1695
                                                                                                                                                        761
         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  상
임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                       g
                                                                                                                                                  Q
                                                                                                                                                                                 ⋧
                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                    8 6
                                                                                                                                                                                                                                                                                                                             ₽
                                            ð
                                                                                                         ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100
                                                                                                                                                                                                                                                                                                                                                                    ര
                                                                                                                                                                                                                                                                                                                          The invention relates to a new isolated polynucleotide comprising the pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or a sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATGATCTTGGAGTTGTTGGGAAATTTGCAAGGTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGTITICTCTCTATATICTGGTTCACCGGTTGGAGTCAATGGCATGCGTGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATOGAACCTCCACCACCATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGAGCACATCGCCCAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                     Pinus radiata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                 New polynuclectide of the superubiquitin promoter from Piuseful in modifying gene expression in a target organism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11; Indels
                                                                                                                                                                 ж
Ж
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66.7%; Score 2020.4;
llarity 99.3%; Pred. No. 0;
Conservative 0; Mismatches
                                                                                                                                                                 Visser ES,
                                                                                                                                                                                                                                                                                             Disclosure, SEQ ID NO 60; 123pp; English.
                                                                                                         GENESIS RES & DEV CORP LTD.
RUBICON FORESTS HOLDINGS LTD
                                                                                                                                                                 Rice SJ, Wood M, Eagleton CK,
                                                                         2002US-00137036.
                                    30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                  WPI; 2003-903678/82.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Simi
Matches 2041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                 (RUBI-)
                                                                                                               GENE-)
```

1120

1000 1994 1060 2054

1934

1874

940

1814

820

1180 2174 1240 2234 1300 2294

2114

1660

2654

8 8 8

셤

ò

g

8 8 õ

ò 셤 ò 셤 a ð g ò 셤

Š

2474 1540 2534 1600 2594

1480

1420

2414

2354

2714

us-10-702-319a-113 copy 41 3070.rng

```
341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1515
                                                                                                                                                                                                                                                                                                                                                                                                             401
                                                                                                                                                                                                                                                                                                                                                                                                                                1395
                                                                                                                                                                                                 1039
                                                                                                                                                                                                                                       1099
                                                                                                                                                                                                                                                                           1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1695
                                                                                                                      Query Match
                                                                                                                                                            979
                                                                                                                                                                               41
                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                          161
                                                                                                                                                                                                                                                                                                                                   281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  821
888888888888
                                                                                                                                                                         a
                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                            8
                                                                                                                                                                                               8
                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                               ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                         2020
                                                                                                                                                                               2080
                                                                                  2894
                                                                                                                                                            3014
                                                                                                                       2954
                                                                                                     1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to a novel isolated polynuclectide sequence comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (cOMT) promoter (ADW80462 or ADW80563)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                   CTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAAACGAAACGGCGTAT
                                             GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                               GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                   ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTTATGT
                                                                                            ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTGTTGTTGTTTATGT
                                                                                                                        CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT
                                                                                                                                                            ATGGATGTGCCTGAATGAAGTTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTT
                                                                                                                                                                              Aregargrecteaarearegaarrergararrergrerrererrerreagraaareaerr
                                                                                                                                                                                                                                                                                                                         grandis caffeic acid O-methyltransferase related cDNA SEQ ID NO:60
                                                                                                                                                                                                                                                                                                                                            plant; transcription; caffeic acid O-methyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 3; SEQ ID NO 60; 82pp; English
                                                                                                                                                                                                                                                                   BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORP
                                                                                                                                                                                                 CGAACAAAAAAAAA 3030
                                                                                                                                                                                                                   CGAACAAAAAAAAA 2096
                                                                                                                                                                                                                                                                   ADW80510 standard; cDNA; 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-MAR-1999; 99US-00276599.
30-JUL-1999; 99US-0146591P.
24-FEB-2000; 2000WO-NIZ000018.
20-JUN-2000; 2000US-00598401.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-NOV-2000; 2000US-00724624.
09-NOV-2001; 2001US-0345397P.
30-APR-2002; 2002US-00137036.
08-NOV-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                06-NOV-2003; 2003US-00702319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2002US-0425087P
                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                & DEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2005-131806/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SJ,
                                                                                                                                                                                                                                                                                                                                                                       Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                       transgenic plant
                                                                                                                                                                                                                                                                                                                                                                                          US2005026162-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RUBICON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-APR-2002;
08-NOV-2002;
08-NOV-2002;
                                                                                                                                                                                                                                                                                                       21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                             03-FEB-2005
                                                                                                                                                                                                                                                                                                                                             wood;
                                            2775
                                                               1841
                                                                                  2835
                                                                                                    1901
                                                                                                                                                            2955
                                                                                                                                                                               2021
                                                                                                                                                                                                 3015
                          1781
                                                                                                                       2895
                                                                                                                                         1961
                                                                                                                                                                                                                    2081
                                                                                                                                                                                                                                                                                   ADW80510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (RUBI-)
                                                                                                                                                                                                                                                          ADW80510
ID ADW8
                         셤
                                                           g
                                                                                                 ద
                                                                                                                                    요
                                                                                                                                                           8
                                                                                                                                                                             g
                                                                                                                                                                                                8
                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                           ò
                                                                               ઠે
                                                                                                                     Š
```

```
ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               760
                sequence or a sequence having 2096 base pairs fully defined in the specification (ADW80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used in the exemplification of the invention.
claimed is a genetic construct comprising the above polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCATCACCAGATCGGCCCAGTAAGGGTAATATTAATTTAACAAATAGGTCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1279 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCGCCATGCAGCCGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1755 ATCGACCTCCTCGAGATCATGGCCAAGGACGGGCGGCGGCGTTCCTCTCCACGGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAATTTTCTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cgaattritcrcritraggraagraaccaargargcarcargrigacaaaaaggcrgarra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1219 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1339 AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAGITITICTCTCTATATICTGGTTCACCGGTTGGAGTCAATGGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               461 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1455 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 521 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      581 TATCGAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGACCGGCTCCGAGACCCAGATGACCCCGACCAAGTCTCGGACGACGACGAGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGACCGGATCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGAGAGGAGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCGCCATGCAGCTGGCGAGGCCTCCGTGCTCCCCATGGTCCTCAAGGCCGCCATCGAG
                                                                                                                                                                                                                                                                                                                                        Length 2096,
                                                                                                                                                                                                                                                                                                                                                                                            4.
                                                                                                                                                                                                                                                                                    Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                      11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTG(
                                                                                                                                                                                                                                                                                                                                     DB 14;
                                                                                                                                                                                                                                                                                                                                     Score 2020.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                d. No. 0;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                     66.78;
                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 99.3
Matches 2041; Conservative
```

```
G; 364 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENESIS RES & DEV CORP LTD.
FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; Page 90-91; 213pp; English.
                                                                                                                                                                                                                BP.
                                                                                                      CGAACAAAAAAAAA 3030
                                                                                                                          Sequence 1630 BP; 394 A; 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-00169789.
99US-0143811P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-NZ000168
                                                                                                                                                                                                                  AAA68014 standard; DNA; 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Havukkala IJ;
                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-317962/27.
                                                                                                                                                                                                                                                                                                                                                                                            Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            present invention
                                                                                                                                                                                                                                                                                                                                                                                                                          WO200022099-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bloksberg LN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-JUL-1999;
                                                                                                                                                                                                                                                                               24-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-APR-2000
                                                                                                                                                                                                                                                   AAA68014;
                                                                          2021
                                                                                                        3015
                                           2955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (FLET-)
                                                                                                                                                                                    SESTITION OF COCCUPATION OF THE PROPERTY OF
                                                                  셤
                                                                                                        8 8
                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2895 CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT 2954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2654
                                                                                                                                                                                                                                                                                                                                                                                                             1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2114
                                                                                                                                                                                                                                                                                    1180
                                                                                                                                                                                                                                                                                                                  2174
                                                                                                                                                                                                                                                                                                                                                                                                                                            2294
                                                                                           1000
                                                           1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGGAAGTTACAAGATTTGTTTTTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGACCGCTTGATCTGCTCCTCTGTGGTGTTCATGGTTCTTGGATTTTGAAAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGAAGGAGCCCTTTTCTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCTAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2835 ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGGAAGTTACAAGATTTGTTGTTTTATGT
                                                                                                                                                                                                                                                                                                                                                                                                   cacaccercercearerceaecececacreeececerecreecercacareareare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTECTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCACAACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rgaagaccectricarccrecreteregrearerrearegrearerregarrreaaagere
                                                                                           cecrecrescracrecrererreseresereseresereseresesesereseses
                                                                                                                                               GATCACTCCACCATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTCATGAAGTGGATATGCCATGACTGGAGGACCACCATTGCGCGAAGTTCCTCAAGA
                                                                                                                                                                                      GTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAAGCTGGTAT
                                                                                                                                                                                                                                                   TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGATGACC
                                                                                                                                                                                                                                                                                                                GCGTTCGAGTATCATGGCACCGGCGATTCAACAAGATCTTTAACCGGGGAATGTCT
                                                                                                                        GTCGAGCGGCTCTACGCCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGG
                                                                                                                                                                                                        CGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAG
ATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1421
                                                                                                                                                                                            1995
                                                                                                                                                                                                                          1061
                                                                                                                                                                                                                                                           2055
                                                                                                                                                                                                                                                                                                                        2115
                                                                                                                                                                                                                                                                                                                                                      1181
                                                                                                                                                                                                                                                                                                                                                                                     2175
                                                                                                                                                                                                                                                                                                                                                                                                                   1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2415
                                                                                                                                 1935
                                                                                                                                                              1001
                                                                                                                                                                                                                                                                                         1121
                                                                   1875
                                    881
                                                                                                 941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ሯ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                  8 8 8
                                                                                                                                                      셤
                                                                                                                                                                                            ò
                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                              ò
                            g
```

The present invention describes isolated polynucleotides and proteins canoding and representing the enzymes cinnamate 4-hydroxylase (C4H), cenceding and representing the enzymes cinnamyl-O-methyl transferase (CMT), cinnamyl-CoA reductase (CMT), cinnamyl-CoA reductase (CMT), phenylalanine ammonia-lyase (CAD), cinnamoyl-CoA reductase (CMT), phenylalanine ammonia-lyase (CAD), cinnamoyl-CoA reductase (CMC), phenylalanine ammonia-lyase (CAD), coniferin beta-glucosidase (BGG), coniferol glucosyl transferase (CAT), coniferin beta-glucosidase (BGG), coniferol glucosyl transferase, peroxidase, ferulate-5-hydroxylase (FSH), alpha-amylase, caffeic acid methyl transferase, caffeoyl CoA methyl transferase, clavenoid hydroxylase, and isoflavone reductase, which are liqual hydroxylase, and isoflavone reductase, which are transferase, flavenoid hydroxylase, and isoflavone reductase, which are involved in the liquin content, liquin composition and the structure of a plant, especially eucalyptus and pine species, and for modifying the producing a plant having altered lignin content, composition and for producing a plant having altered lignin content, composition and for modification. The lignin content and pefficiently modified using the polynuclectides. AAA67908 to AAA68201 and AAB16341 to AAB16449 represent process. and Novel polyncleotide encoding enzymes involved in lignin-biosynthetic pathway useful for producing transgenic plants especially eucalyptus apine species having altered lignin content, composition and structure. Plant; lignin; lignin biosynthetic pathway; Eucalyptus grandis; Pinus radiata; Monterey pine; ds. Eucalyptus grandis OMT nucleotide sequence SEQ ID NO:107 ATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTT

	RESULT 9 AD041764 standard; DNA; 1630 BP. X AD041764; X AD041764; X AD041764; X AD041764; X T -JAN-2004 (first entry) E C -methyl transferase DNA #13. X W (a): plant; lignin content; lignin composition; lignin structure; X W (a): plant; lignin content; lignin composition; lignin structure; X W (a): plant; lignin content; lignin composition; lignin structure; X W (a): plant; lignin content; lignin content; X W (a): plant; lignin content; lignin content; X N (a): plant; lignin content; lignin content; lignin biosynthetic pathway, for modulating lignin content; composition and structure. Y N (a): producing a plant with altered lignin content; composition and structure. X N (a): producing a plant with altered lignin content; composition and structure. X N (a): producing a plant with altered lignin content; composition and structure. X Claim 1; SEQ ID NO 107; 206pp; English. X T (a): producing a plant with altered polynucleotides, mean isolated polynucleotides.
Query Match 47.2%; Score 1429.6; DB 3; Length 1630; Best Local Similarity 99.0%; Pred. No. 0; Matches 1449; Conservative 0; Mismatches 14; Indels 1; Gaps 1; Qy 1561 CCGTTTATTTCCTGGCTTTCCTTGCTCGGGAAGAGAGAGA	1981 AGAACGAGGACCCACTCATCATCATCATCATCATCATCAACACACAAATCCTC

8\$\$\$\$\$\$\$\$\$\$\$

셤

ઠ

g ઠે a ð g δ

ð

```
Strawberry; O-methyltransferase; 2,5-dimethyl-4-hydroxy-3(2H)-furanone;
STOMT; DMHF; dithiothreitol; 2,5-dimethyl-4-methoxy-3(2H)-furanone; DTT;
DMMF; enzyme; plant; gene; ds.
                                                                                                                                                                                                                                                                                                                                                TITGITTTTATGICTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGT
                                                                                                                                                                                                                                                                                                                       CATTGGCCAAAAGGGGCCCGGAATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                            TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                                                                                                                                                                                                                             TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA
                                                                                                     ACGICALGGAGITCCTGAAGACCGCTTGATCTGCTCTCTGTGGTGATGTTCATGGTTCT
                                                                                       AGTGCGTACTCCTGTGTACCCAGACACGAGCCTAGCGACCAAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UYBA-) UNIV BAYERISCHE JULIUS MAXIMILIANS WUERZ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Strawberry O-methyltransferase (STOMT) DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag= a
/product= "STOMT protein"
                                                                                                                                                                                                                                                                                                                                                                                              TTCAGTAAATCACTTCGAACAAA 3023
                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-NOV-2002; 2002WO-EP013320.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAL60735 standard; DNA; 1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fragaria x ananassa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO2003046163-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Strawberry; C
STOMT; DMHF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-SEP-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAL60735;
                                                                                                                                                                                                                                                                                                                                                                                                                      1441
                                                                                                                                                                                                                                                                                         1261
                                                                                                                                                                                                                                                                                                              2880
                                                                                                                                                                                                                                                                                                                                   1321
                                                                                                                                                                                                                                                                                                                                                                                                  3000
                                                                                                                                                                                2700
                                                                                                                                                                                                                           2760
                                                                                                                                                                                                                                                                     2820
                                                                                                                                       2640
                                                                                                                                                             1081
                                                                                             2580
                                                                                                                  1021
                               901
                                                    2520
                                                                        961
                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                      5 B 5
                                                                                                                                                                                                 셤
                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                              8
                                                                                                             셤
                        ద
                                             8
                                                                       임
                                                                                       ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAGGGAGATGTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG 2459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2160
                                                                                                                                                                                                                                                                                                                                                                    1920
                                                                                                                                                                                                                                                                                                                                                                                                             TCCCCGATGGCAAGGTCGAGCGGCTTAAGGCGCCGGTGTGCAAGTTCTTGGTCA 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                        2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                        1740
                                                                                                                                                                                                                                                                                   1800
                                                                                                                                                                                                                                                                                                                           1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                     1620
                                                                                                                                                                                             AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCCAGATGACCCCGACCCCAAGTCTCGGACG 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                             180
                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGTACGGGATGACCGCGTTCGAGTATCATGGCACCCGCCGCGATTCAACAAGATCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCGGGGAATGTCTGATCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTCGAGGGCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
polypeptides and genetic constructs are useful for modulating lignin content, composition and structure of plants, or for producing a plant having altered lignin content, composition and structure. The polynucleotides are also useful in genome mapping, physical mapping, positional cloning of genes, or as non-disruptive tags for marking organisms, particularly plants. The present sequence represents a polynucleotide associated with the lignin biosynthetic pathway.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rdgaaagcriggrafraccrigaaagargcggrccrrgaaggcggaarcccarrcaacaagg
                                                                                                                                                                                                                                        ACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCTAA
                                                                                                                                                                                                                                                     AGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCC
                                                                                                                                                                                                                                                                                              TCTCCACGGGGGAAATCGCGGCCACAGCTCCCGACCCCAGAACCCCGAGGCACCCCGTCATGC
                                                                                                                                                                                                                                                                                                                                              TCTCCCCGGGGGAAGTCGCGGCCCAGACCCCAGAACCCCGAGGCACCCGTCATGC
                                                                                                                                                                                                                                                                                                                                                                    TCGACCGGATCTTCCGGGCTGCTGGCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACC
                                                                                                                                                                                                                                                                                                                                                                                AGAACGAGGACGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA
                                                                                                                                                                                                          ccerrirarirccicrecrirecrirecricadarcrecesaagagagagagagagagagag
                                                                                                                                                    Gaps
                                                                                                           Length 1630;
                                                                                                                                 ä
                                                                                      Sequence 1630 BP; 394 A; 433 C; 439 G; 364 T; 0 U; 0 Other;
                                                                                                                                  14; Indels
                                                                                                             DB 10;
                                                                                                           Score 1429.6; 1
Pred. No. 0;
0; Mismatches
                                                                                                             Query Match
Best Local Similarity 99.0%;
Matches 1449; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2281
                                                                                                                                                                                                                                                                                                                                                                                                                     1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                           1861
                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                       1741
                                                                                                                                                                                                                                                                                                                                 1801
                                                                                                                                                                               Н
                                                                                                                                                                                                     1621
                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                              1681
                                                                                                                                                                                                                                                                  121
```

g

g ò

g ઠે g 8 셤 ò g જે

ò

g ò

g ò

Š

g

원 ò

1440

2464

939

2524

```
2525 GTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC
                                                                                                                                                                                                                                                                                                                                                                                                        Novel promoter sequences useful for modulating transcription of plant DNA sequences of interest and production of polypeptides.
GAGGGCCTCAAATCCATCGTTGATGTCGGTGGCGGCACCGGAGCTGTGGTGAACATGATC 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The
                                                                                                                                                                                                                                    GGAAATGCAATTTTCATGAAGTGGATATGTCACGACTGGAGTGACGAGCATTGCATAAAA
                                                                                                                                                                                                                                                                                             TTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC
                                                                              760 GTTTCCAAGTACCCTTCGATCAAGGCCATCAACTTCGACTTGCCTCATGTTATCGAAGAT
                                                                                                                                                               derecercaararecerdererzaacacerredadegedacererreraadreraceaade
                                                                                                                                                                                                          GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAG
                                                                                                                                                                                                                                                                                                                                    940 TTCTTGAAGAACTGCTACGCTGCGCTTCCAGACGATGGCAAAGTGATTCTTGCTGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2585 ATCATGTTGCCCACACAACCCAGGCGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCAAAGGGGCCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCGTTTCGGCACTCACGTC
                                                                                                                       GCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Promoter; eucalyptus; pine; gene transcription; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O-methyl transferase promoter coding sequence #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GENE-) GENESIS RES & DEV CORP LTD.
(FLET-) FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arreagrircrinagaagarcrea 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2705 ATGGAGTTCCTGAAGACCGCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rice SJ, Eagleton CK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 48; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-FEB-2000; 2000WO-NZ000018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-00276599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAC62762 standard; DNA; 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-647236/62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40200058474-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ď,
                                                                                                                                                                                                                                                                                             2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2645
  200
                                           2286
                                                                                                                          2345
                                                                                                                                                                 820
                                                                                                                                                                                                            2405
                                                                                                                                                                                                                                                    880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAC62762;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                       g
                                                                                                            8
                                                                                                                                                        g
                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                           ď
                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGAACCTCCCC 1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAAC 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC 2105
                                                                                                                                                                                                                         The invention relates to novel strawberry O-methyltransferase (STOMT) polypeptides capable of methylating an ortho-dihydroxy substituted ring system and nucleic acid molecules encoding such polypeptides. The invention is useful for methylation of an ortho-dihydroxy substituted ring system and/or its mimetics (such as 2,5-dimethyl.4- hydroxy-3(2H)-furanone (DMHF) or dithiothreitol (DTT)). The invention is also useful for the synthesis of naturally occurring substances preferably aroma compounds such as 2-methoxyphenol, vanillin, ferulic acid, feruoyl-CoA or DMMF, for enhancing the function of naturally- occurring STOMT in plants or tissue cultured cells, or to enhance the production of flavour-enhancing substances such as vanillin or 2,5-dimethyl-4-methoxy-3(2H)-furanone (DMMF). The present sequence is Fragaria x ananassa (strawberry) O-methyltransferase DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAATGGGTTCCACCGG---CGAGACTCAGATGACTCCGACCCATGTCTCCGACGAA 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGTATGCTTTCGCCTTCTGGCCAGCTACTCCATTCTAACCTGCTCATTGCGTACGCTTCCG 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGACGGGGTCTCCATCGCCGCACTCGACTTGATGAACCAGGACAAAATCCTCATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                580 GGCATGACTTGATTACCATGGAACTGACCCTAGATTCAACAAGGTCTTCAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAATGGCTGACCACTCCACCATTACCATGAAGAAAATCCTTGAGACTTACAAAGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | GAGGCCTCGAGACCGTGGTCGATGTCGGAGGGGGCACTGGGGCCGTGCTCAGCATCAGCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1626 AGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   160 GCCAACCTCTTCGCCATGCAACTCGCCAGCGCCTCCGTCCTCCCCATGGTCCTCAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCATCGAGATCGACCTCCAGGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    220 GCCATCGAGCTCGACCTCTTGGAGATCATGGCCAAGGCCGGGCCGGCTCTTTCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1806 ACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     280 ccradicarcradecrereaderrecdaecaagaaeceegaagereegreage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACGGCAAAGTTGAGAGGCTCTACTGTTTTGGGACCTGTGTGTAAGTTCTTGACCAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              520 AGCTGGTATCATTTGAAGGATGCAGTTCTTGATGGTGGGATTCCATTTAACAAGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGATGACCGCGTTCGAGTATCATGGCACCCGCCGATTCAACAAGATCTTTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTC
                                                                                                      Novel isolated strawberry O-methyltransferase polypeptide useful for methylating ortho-dihydroxy substituted ring system such as catechol, caffeic acid, protocatechuic aldehyde or pyrogallol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1876;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1876 BP; 432 A; 449 C; 429 G; 566 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 676; DB 9; Length 18
Pred. No. 8.4e-176;
0; Mismatches 250; Indels
                                                                                                                                                                                         Claim 1; Page 75-76; 78pp; English
    Ξ
    Wein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     / Match 22.3%;
Local Similarity 77.0%;
les 850; Conservative (
  ď
  Kaldenhoff
                                         WPI; 2003-532772/50.
P-PSDB; AAO30114.
  Schwab W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
```

g

8

ద ઠે 셤 ઠે

ઠે

셤

ઠે

8

g

8 g ò g

요 ઠે

ò

```
AACTCCGTATTTCTCTCTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200198485-A1
                                                     20-JUN-2000;
28-NOV-2000;
                      27-DEC-2001
                                                                                                      Perera R,
                                                                                                                                                                                                                                                                                                                                                                                          979
                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                              (GENE-)
                                                                                       (FLET-)
                                                                                                                                                                                                                                                                                                                                                                   Best Loca
Matches
                                                                                                                                      Novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                   1634
                                                                                                       1098
                                                                                                                                       1158
                                                                                                                                                                                                                                                                                                    AGAGITITCTCTCTATATICTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT 1454
                                                                                                                                                                                                                                                                                                                                                                    TATCGAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT 1574
                                                                                                                                                                                                                                                                                                                                     ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA 1514
                                                                                                                                                                                                                                                  9
                                                                                                                       cgaattttrcrcrrrraggraagraaccaatgatgcarcatgrigacaaaaaggcrgarra 120
                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis;
temporally regulated promoter; Pinus radiata; Bucalyptus grandis; 88;
PCR primer.
                                                                                                                                                                                                                                                                                                                                                                                                                  601 CIGCITICCITICCICCARGICCICGGAAGAGAGAGAGAGAGAGAGAGAGAGAATGGGI
                                                                                                                                                                                                                                                                                                                                                                             AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                      GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                  AACTCCGTATTTCTCTCCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                      1 CTGAGCCATTTAATTTCGAGAGCACATGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                       979 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGTTGCTGCCATAACTGT
                                                         Gaps
                                                         4,
                                        Length 661;
 organism or
                        0 Other;
                                                         Indels
                         C; 150 G; 174 T; 0 U;
                                        2; DB 3;
1.4e-165;
nes 3;
  an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eucalyptus grandis promoter polynucleotide #6.
  or identify
                                        ; Score 638.2; I
; Pred. No. 1.4e-
0; Mismatches
   to tag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABK17027 standard; cDNA; 661 BP.
                                         21.1%;
98.9%;
                          Sequence 661 BP; 192 A; 145
 sequences may also be used reproductive material
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                          Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eucalyptus grandis.
                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                     1635 T 1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                      1515
                                                                                                         1039
                                                                                                                                                        121
                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                        1339
                                                                                                                                                                                                                                                                                                        1395
                                                                                                                                                                                                                                                                                                                                       1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                         1159
                                                                                                                                                                                                        1219
                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                         1279
                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABK17027
                                                                                                                                          1099
                                                                                                                          61
                                           Query Match
                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABK17027
ID ABK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                         ò
                                                                                                                      셤
                                                                                                                                         ò
                                                                                                                                                     셤
                                                                                                                                                                     ò
                                                                                                                                                                                      셤
                                                                                                                                                                                                       ð
    ន្តដ្ឋប្ល
```

```
The invention relates to isolated promoter sequences from Pinus radiata and Bucalyptus grandis, comprising a sequence chosen from leaf-, root-, cand Bucalyptus grandis, comprising a sequence chosen from leaf-, root-, flower-, pollen-, bud-, meristem-specific promoters or temporally certaglated promoters such as xylogenesis-specific promoters. The promoter corpulated promoters used for modifying gene expression in a modifying expression of a polymucleotide that comprises an intromandifying expression of a polymucleotide that comprises an intromandifying growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional companies in various assays to determine biological activity, to cloning of genes, in various assays to determine biological activity, to cloning of genes, in various assays to determine biological activity, to compounds, and to quantitatively determine levels of interacting proteins or or other compounds. Sequences ABKI7016-ABKI7125 represent Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        el polynucleotide promoter sequences from Pine and Eucalyptus useful modifying expression of endogenous and/or heterologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1159 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATGATCTTGGAGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1039 CGAATTTTCTCTTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 638.2; DB 6;
Pred. No. 1.4e-165;
0; Mismatches 3;
                                                                                                                                                             GENESIS RES & DEV CORP LTD.
FLETCHER CHALLENGE FORESTS IND LTD.
                                                                                                                                                                                                                                                               Lasham A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polynucleotides in transgenic plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Page 63-64; 121pp; English
                                                                                                                                                                                                                                                               Eagleton C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21.1%;
98.9%;
20-JUN-2001; 2001WO-NZ000115.
                                                           2000US-00598401
2000US-00724624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                654; Conservative
                                                                                                                                                                                                                                                                      Rice S,
                                                                                                                                                                                                                                                                                                                                  WPI; 2002-114583/15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
```

1158

1218

180

1278

9

1158

120

1218

1278

300

1338

360

1394

420

1454

480

1514

1574

540

1634

9

900

ò

ð

```
241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                              1395 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                         CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                            1159 AAGGCGCCAAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCTTTCCTTAACAAG
                                                                                                                                                             181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACCACCATCCTTAACAAG
                                                                                                                                                                                                                                    1279 AACTCCGTATTTCTCTCACTTCCATAACCCCTGATTAATTTGGTGGGAAAGCGACGCC
                                                                                                                                                                                                                                                            301 AACTCCGTATTTCTCTCTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                   421 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                              1455 ACATATTGGTGTGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                           1515 TATCGAACCTCCACCACACACTCCTCAATCCCCACCATTAATCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                        1219 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
               CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E. grandis caffeic acid O-methyltransferase promoter SEQ ID NO:12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ss; wood; plant; transcription; caffeic acid O-methyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
537. .543
/*tag≈ a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADW80462 standard; cDNA; 661 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-NOV-2003; 2003US-00702319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-APR-2005 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1635 T 1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US2005026162-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
TATA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-FEB-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            - [-
                                                1039
                                                                                              1099
                                                                                                                                                                                                                                                                                   1339
   979
                         ~
                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                              g
                                                                                                                                                            g
                                                                                                                                                                                       ð
                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                ò
                                                                g
                                                                                           ò
                                                                                                                                    ò
                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                1574
                                                                                                                                                                             1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ï
                                      1454
                                                                                  1514
                                                                                                                                                                                                    9
               420
                                                           480
                                                                                                        540
                                                                                                                                                      900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleocide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                                                                                                                                                                            AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGCCATGCGTGACGAGTGT
                                                                                   ACATATTGGTGTGTGCGATATTTTGCGGGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                               ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGTTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTTATTCCT
                                                                                                                                           The invention relates to a new isolated polynucleotide comprising the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           radiata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 21.1%; Score 638.2; DB 10; Length 661; Best Local Similarity 98.9%; Pred. No. 1.4e-165; Matches 654; Conservative 0; Mismatches 3; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                     ds; Monterey pine; superubiquitin; promoter; gene expression; transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New polynucleotide of the superubiquitin promoter from Pinus useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                Bucalyptus grandis superubiquitin related sequence #6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; SEQ ID NO 12; 123pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Visser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENESIS RES & DEV CORP LTD. RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wood M, Eagleton CK,
                                                                                                                                                                                                                                                                                                             BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                                                                                                                            ADH75428 standard; DNA; 661
                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2003-903678/82.
                                                                                                                                                                                                                                                                                                                                                                                                                                          Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO2003093475-A1.
                                                                                                                                                                                                                          T 1635
                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                         22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13-NOV-2003,
                                                                                                                                                                                                                                                 - [-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rice SJ,
                                                           421
                                                                                                                                                                                                      601
                                                                                                                                                                                                                           1635
                                     1395
                                                                                   1455
                                                                                                         481
                                                                                                                                1515
                                                                                                                                                       541
                                                                                                                                                                              1575
               361
                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                   ADH75428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GENE-) (RUBI-)
                                                                                                                                                셤
                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                             ద
                                                                                                  엄
                                                                                                                                                                           ઠે
                                                                                                                                                                                                                          ò
```

99

1574

600

540

480

```
The invention relates to a method of genetically transforming a plant simultaneously with multiple genes from the phenylpropanoid pathways, comprising incorporating into the genome of the plant, a number of genes, their substantially similar fragments or their combinations, to produce plants displaying altered agronomic traits. The genes are selected from 4 commarate-CoA ligase (4CL), coniferyl aldehyde 5-hydroxylase (CAld5H), sadenosyl-L-methionine (SAM)-dependent 5-hydroxyconiferaldehyde O-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         plant; aspen; phenylpropanoid pathway; agronomic; lignin; paper; 4-coumarate-CoA ligase; 4CL; coniferyl aldehyde 5-hydroxylase; CAld5H; S-adenosyl-I-methionine-dependent; 5-hydroxyconiferaldehyde O-methyltransferase; cellulose; pulp; coniferyl alcohol dehydrogenase; CAD; sinapyl alcohol dehydrogenase; CAD; sinapyl alcohol dehydrogenase; CAD; sinapyl alcohol dehydrogenase; SAD; syringyl; guaiacyl; agriculture; gene; SB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genetically transforming plant with multiple genes from phenylpropanoid pathways, comprises incorporating number of genes into the genome of the plant, to produce plants displaying altered agronomic traits.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "5-hydroxyconiferaldehyde O-methyltransferase
                                                                                                                                                                                                                    <u>ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA</u>
                                                                                                                                         TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                              TATCGAACCTCCACCACCATACCTCCATTCCCCACCATTTATCCGTTTTATTCCT
                                                               ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cDNA encoding 5-hydroxyconiferaldehyde O-methyltransferase (AldOMT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UNMT ) UNIV MICHIGAN TECHNOLOGICAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 2; Fig 4A; 95pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                            BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                         ABK48067 standard; cDNA; 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-SEP-2001; 2001WO-US027445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35-SEP-2000; 2000US-0230086P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product= ".
(AldOMT) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65. .1162
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-351773/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Populus tremuloides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Li L;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAU80015
                                                                                                                                                                                                                                                                                                        1635 T 1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200220717-A2
                                                                                                                                                                                                                                                                                                                                             Ť 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΔĽĊ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-MAR-2002
                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABK48067;
                                                                     1455
                                                                                                                                                   1515
                                                                                                            481
                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                               661
                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chiang
                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                             ABK48067
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                         요
                                                         8
                                                                                                    셤
                                                                                                                                                 ò
                                                                                                                                                                                    ద
                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1395 AGAGTTTTCTCTCTATATTCTGGTTCGGGTTGGAGTCAATGGCATGCGTGACGAATGT 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a novel isolated polynucleotide sequence comprising a functional vascular tissue-specific Bucalyptus grandis caffeic acid O-methyltransferase (COMT) promoter (ADM80642 or ADM80653). Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADM801810), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                  New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTCCGTATTTCTCTCTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 creaeccarrraarrceaeaecacarcecccaaaarrarrcrrcrrecreccaraacrer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAATTTTCTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1219 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21.1%; Score 638.2; DB 14; Length
98.9%; Pred. No. 1.4e-165;
ive 0; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the exemplification of the invention.
                                                                                                                                                                                                                                     RES & DEV CORP LTD. FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 2; SEQ ID NO 12; 82pp; English
                                                                                                                                                                                                                                                                                              Eagleton CK;
                                  25-MAR-1999; 99US-00276599.
30-JUL-1999; 99US-0146591P.
24-FEB-2000; 2000WO-NZ000018.
20-JUN-2000; 2000US-00598401.
28-NOV-2000; 200US-00724624.
90-NOV-2001; 200US-0345397P.
30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                2002US-0425087P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 90.9
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                SJ,
                                                                                                                                                                                                                                                                                                                                     WPI; 2005-131806/14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                     GENESIS F
RUBICON F
                                                                                                                                                                                                                                                                                                Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                Perera R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                     (GENE-)
(RUBI-)
```

셤 ò a ò

8 ઠ

8 d ò 셤 ò 쉽 ઠે

```
methyltransferase (AldOWT), coniferyl alcohol dehydrogenase (CAD) and sinapyl alcohol dehydrogenase (SAD). The method is useful for the transformation of plant tissue for the alteration of lighin monomer composition, increased syringyl/guaiacyl (S/G) lighin ratio and increased cellulose content and transgenic plants resulting from such increased transformations. This is an improved method to simultaneously control the lighin quantity, lighin compositions, and cellulose contents in plants, and is applicable to all plant species that are susceptible to the transfer of genetic information by Agrobacterium or other gene delivery system. The method is of particular value to paper and pulp industries because lighin containing higher syringyl monomer content is more susceptible to chemical delignification. Woody plants transformed with constructs offer a significant advantage in the delignification of the light composition in grasses by insertion and expression of the terrologous SAD gene offers a unique method for increasing the digestibility of grasses and is of significant potential economic benefit to the farm and agricultural industries. The present sequence represents the coding sequence of 5-hydroxyconiferaldehyde O-methyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1501 BP; 396 A; 344 C; 331 G; 430 T; .0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (AldOMT) used in the method of the invention
```

Job time : 1285.86 secs

1;	1706	139	1766	199	1826	259	1886	319	1946	379	2006	439	2066	499	2126	559	2186	619	2246	619	2306	739	2365
Query Match 20.8%; Score 631; DB 6; Length 1501; Best Local Similarity 74.5%; Pred. No. 2.1e-163; Matches 807; Conservative 0; Mismatches 275; Indels 1; Gaps	1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGAAACTCTTCGCCATGCAG	80 GAAACTCAGATGACTCCAACTCAGGTATCAGATGAGAGGCACACCTCTTTGCCATGCAA 1	1707 CTGGCGAGCGCCTCCGTGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC	140 CTAGCCAGIGCTICAGTICTACCAATGATCCTCAAAACAGCCATIGAACTCGACCTTCTT 1	1767 GAGATCATGGCCAAGGACGGGCGGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAG	200 GAAATCATGGCTAAAGCTGGCCCTGGTGCTTTCTTGTCCACATCTGAGATAGCTTCTCAC ;	1827 CTCCCGACCCAGAACCCCGAGGCACCCGTCGACCGGATCTTCCGGCTGCTGCTC	260 CTCCCTACCAAAAACCCTGATGCGCCTGTCATGTTAGACCGTATCCTGCGCCTCCTGGCT 3	1887 AGCTACTCCGTGCTCACGTGCACCCTCCGGATCCCCGATGGCAAGTCGAGGCGGCTC 1	320 AGCTACTCCATTCTTACCTGCTCTCTGAAAGATCTTCCTGATGGGAAGGTTGAGAGACTG					2067 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2			560 CATGGCACGGATCCAAGATTCAACAAGGTCTTCAACAAGGGAATGTCTGACCACTTTACC	2187 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTGGAGACCGTGGTC 2	620 ATTACCATGAAGAAGATTCTTGAGACCTACAAAAGGCTTTGAAGGCCTCACGTCCTTGGTG (2247 GATGTCGGAGGCGGCCTGGGCCCGTGCTCAGCATGATCGTTGCCAAATACCCGATCAATG 2	680 GATGTTGGTGGGGGTCGGTGGGCCGTTAACACCATCGTCTCTCTAAATACCCTTCAATC	2307 AAAGGGATCAACTICGA-CCGCCCAACGGAIIGAAGACGCCCCACCCCTICCIGGIGIC
Que: Best Matc	ģ	qq	ģ	qq	ò	qq	ò	qq	Š	qq	È	Ср	à	Op	à	С	ò	qq	ò	qq	à	Д	È

gn	/40	740 AAGGCATTAACTICGAICIGCCCCACGICALIGAGGAIGCCCCCAICLIAICCCGGAGIG 755
à	2366	AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 2425
Dp	800	GAGCATGTTGGTGGCGACATGTTTGTTAGTGTGCCCAAAGCAGATGCCGTTTTTCATGAAG 859
ò	2426	TGGATATGCCATGACTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2485
DP QD	860	TGGATATGCCATGCATGGAGCGACGCCCACTGCTTAAAATTCTTGAAGAATTGCTATGAC 919
ò	2486	GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC 2545
DP	920	GCGTTGCCGGAAAACGGCAAGGTGATACTTGTTGAGTGCATTCTTCCCGTGGCTCCTGAC 979
ζŏ	2546	ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCA 2605
QO	980	ACAAGCCTTGCCACCACGAGGGAGTCGTGGATGATGTCATGATGTTGGCGCACACCCC 1039
ò	2606	GGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG 2665
Вр	1040	GGTGGGAAAGAGAGACCGAGAAGGAATTTGAGGCTTAGCTAAGGGAGCTGGCTTCCAA 1099
λ̈́O	2666	GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCATGGAGTTCCTGAAGACCGCT 2725
QQ	1100	GGTTTTGAAGTAATGTGCTGTGCATTCAACACACATGTCATTGAATTCCGCAAGAGGCC 1159
ò	2726	TGA 2728
QQ	1160	TAA 1162
Search co	omplet	Search completed: November 1, 2006, 00:21:24

THIS PAGE LEFT BLAUK

466.4 15.4 838 5 CK319716 466.4 15.4 936 9 CX665083 464.2 15.3 904 9 CX664451 462.8 15.3 847 10 DT571100	4 461.6 15.2 813 8 COURSALDS COURSALDS CENERALS. 4 660.4 15.2 819 8 COUL3461 CR ED013 26 459.4 15.2 819 8 COUL3461 COURSALDS COURSALDS CENERALS. 27 458.6 15.1 903 9 CX664005 CX664005 UCRCP01_0 28 457 15.1 892 9 CX664005 CX664055 UCRCP01_0 29 456 15.0 901 8 CX053237 CX053237 UCRCS09_4 30 454.8 15.0 812 8 CX053237 CX053237 UCRCS09_4 31 454 15.0 919 9 CX670522 CX670522 UCRCP01_0 32 450.2 14.9 820 10 DY333732 DY333732 OB MEAGOI 38 449.6 14.8 881 10 DT472664 DY333772 OB MEAGOI 39 449.6 14.8 881 10 DT472664 DY334664 DS34664 OB SEB038 30 456 15.0 812 6 CF07550	436.4 14.4 853 10 DW016705 436.14.4 853 10 DW016705 435.2 14.4 821 8 CO127529 433.2 14.3 817 10 DT58669 431.6 14.2 794 8 CO079925 431 14.2 985 10 DR919330 430.2 14.2 925 9 CX665084 429.4 14.2 702 10 DT041484 429.2 14.2 758 9 DN759581	SULT 1 SOGRE CNSO9ZRE CNSO9ZRE TAIDING Arabidopsis thaliana Full-length CDNA Complete sequence from clone GSLTPGCHISZHO4 of Hormone Treated Callus of strain col-0 of Arabidopsis thaliana (thale cress). CESSION BX831565. IG:42456552 WWORDS HTC; GSLT CDNA. Arabidopsis thaliana (thale cress) ONGANISM HTC; GSLT cDNA. Arabidopsis thaliana (thale cress) Spermatophyta; Magnoliophyta; Embryophyta; Tracheophyta; Spermatophyta; Embryophyta; Spermatophyta; Embryophyta; Core eudicoryledons; Spermatophyta; Unidiplantae; Streptophyta; Embryophyta; Spermatophyta; Arabidopsis. FERENCE 1 (bases 1 to 1315) Crastelli, V. Aury, J. M., Jaillon, O., Wincker, P., Clapet, V., Manard, M., Craud, C., Ouetier, F., Scarbelli, C., Schadther, V.,	
0 0 0 0 0	0 4 2 2 2 2 2 2 2 2 2 3 4 4 4 4 4 4 4 4 4	0 C C C C C C C C C C C C C C C C C C C	RESULT 1 CNS 0 2/2/2 COCUS DEFINITION ACCESSION VERSION VERSION VERSION VERSION VERSION CRYWORDS SOURCE ORGANISM REFERENCE AUTHORS	JOURNAL REFERENCE AUTHORS TITLE JOURNAL COMMENT
5.1.9 Biocceleration Ltd.	; Search time 9846.88 Seconds (without alignments) 17207.024 Million cell updates/sec 3070	ueB96473596	cted by chance to have a of the result being printed,	Description BX831565 Arabidops DT566163 EST105680 C0072302 GR Ea31G DT566827 EST107746 CB975481 CAB3007 DV465073 MTUNULI-P C0071813 GR Ea37M C0082948 GR Ea47M DT558009 EST106864 C0087218 GR Ea47M DT558009 EST106864 CX66419 UCRCP01_0 CX66419 UCRCP01_0 CX66419 UCRCP01_0 CX66419 UCRCP01_0 CX66419 UCRCP01_0 CX66406 WTCRP01_0 CX6670521 UCRCP01_0 CX66406 WTCRP01_0 CX66406 WTCRP01_0 CX66406 WTCRP01_0 CX66406 WTCRP01_0 DT497587 WS01126.B
GenCore version 5.1. (c) 1993 - 2006 Bioc	ic search, using sw model tober 31, 2006, 23:29:19; Sear (with 17207, 310-702-319A-113_COPY_41_3070 330 cacctgttcagtttgattcc		results predicted	AARIES NE

```
/tissue_type="immature ovules".
/dev_stage="immature ovules (-3 to 3 days post anthesis, dev stage="immature ovules (-3 to 3 days post anthesis, DPA) with or without fibers"
/clone_lib="TWO"
/clone lib="TWO"
/clone lib="Two
/clone lib="Two"
/clone lib="Two
/clone lib="
                                                                                                                                                                                                                                                                                                                                                                                     1087 AAGGGCATCAAAGT-TTCTGCGACGCTTTTGGTGTTAACCTTATTGAGTACTCAAGAAG 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 31-OCT-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gossypium hirsutum (upland cotton)
Gossypium hirsutum
Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons,
core eudicotyledons,
rosids, eurosids II; Malvales, Malvaceae, Malvoideae, Gossypium.
1 (bases 1 to 951)
Yang, S.S., Cheung, F., Wei, N.E., Lee, J.J., Ha, M., Stelly, D.M.,
Thaxton, P., Sze, S.H., Triplett, B.A., Town, C.D. and Chen, Z.J.
BSTS from immature ovule (-3 to 3 DPA) of G. hirsutum TM-1
Unpublished (2005)
Contact: Z. Jeffrey Chen
The Chen lab: A Home of Polyploidy (http://polyploidy.tamu.edu)
                                                                                                                                         GACACGAGCCTAGCGACCAAGAATGTGCACATCGACTGCATCATGTTGGCCCACAAC
                                                                                                                                                                                                                              CCAGGCCGCAAAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2663 CAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Texas A&M University
Department of Soil & Crop Sciences, MS2474, College Station, 77842-2474, USA
T18-2-2474, USA
T18-379 862 2358
Fax: 979 845 0456
Email: zjchen@neo.tamu.edu
TIGR sequence name: GOAB447TR
Seq primer: CAG GAA ACA GCT ATG ACC.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DT546163 BST1056803 TMO Gossypium hirsutum cDNA, mRNA sequence. DT546163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1146 CTCTAAAAACAAACAATGTTCCTATGAAGATGATT 1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="mRNA"
/culfivar="mexas Maker-1 (TM-1)"
/db_xref="taxon:3635"
/tissue_type="Immature_ovules"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2723 GCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTT 2757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Gossypium hirsutum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DT546163.1 GI:78325889
                                                                                                                                                                          2543
                                                                                                                                                                                                                                                                                                                                                         2603
                                                                                                                                                                                                                                                               196
                                                                                907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DT546163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                       ፟
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2483 GAIGCGCTICCCAACAAIGGAAAGGIGAICGIIGCAGAGIGCGIACICCCIGIGIACCCA 2542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GICGATGICGGAGGCGGCACTGGGCCGTGCCATGATCGTTGCCAAAIACCCATCA 2303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGC 1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1825 AGCTCCCGACCCAGAACCCCCGAGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGG 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGAGATCATGGCCAAGGACGGCCGGGGGCGTTCCTCTCCACGGGGAAATCGCGGCAC 1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cercriacicicirinaacciecrecaaceraaacirricesiraagegirgaacea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               133 AACTAGCCAGTGCTTCCGTTCCGATGGCTTTAAGATCCGCCTTAGAGCTTGACCTTTC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193 †rickáchrarickácháchara restraktorok a trakách z doka produktor z doka z do
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Aactricicakicakakaticindakacinicagicaticaticakicidaticiticatinin 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            667 dirdaldirdandandanidandanakaricaaahidaridiricaadiahada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2304 AIGAAAGGGAICAACTICGACCGCCC-CAACGGAITGAAGACGCCCCCACCCTICCTGGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCAAGCACGTCGGAGGGGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGTGGATATGCCATGACTGACGACCCATTGCGCGAAGTTCCTCAAGAACTGCTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367 iriacidecirderccediricaagiarrigaccaagaacdaagarderdiricairr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2065 ATGCGGTCCTTGAAGGCGGAATCCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2184 ACCATTACTATGAAGAAAATACTGGAAACATACAAGGGCTTCGAGGGCTCGAGACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCCACTCAACTTGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCTCTTTGTCTTATGAACCAAGACAAGGTTCTCATGGAAAGCTGGTAGCATTTGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               487 Argcaarrcirgargargagarrccarrcaagagcrrargaaargagcrcdrrcaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2125 ATCATGGCACCGACCCGCG-ATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      547 ACCACGGGACTGAACCTAGCATTCAACAAGGCTCTTTAACAATGGAATGTCTAACCATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cacione de la constanta de la c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1315;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 535.4; DB 6; Length
Pred. No. 5.4e-143;
0; Mismatches 326; Indels
                                                                                                                                                                                                                                                                                      Callus"
                                                                                                                 organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                            /clone="GSLTPGH15ZH04"
/tissue_type="Hormone Treated
/ecotype="Col-0"
/plasmid="pCMVSPORT_6"
                                                                                                                                                            type="mRNA"
xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="At5g54160"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.7%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 70.0°
Matches 780; Conservative
                                                                                                                                                                                                                <del>g</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73
                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
```

셤

셤

ద ò

임 à

ద ઠે g ઠે g à

ద ð

₽ 셤 ò 셤 ò 셤 8

ઠે

g ò g 8

ò

```
Not1, size-selected using agarose gel electrophoresis, and directionally cloned into the Not1-EcoRV sites of the pCMV-SPORT6.1. The ligated products were transformed using ELECTROMAXTWDH108T1 cells. The library contained 4.2x106 cfu with ~100% of colony growth rate. It is estimated that over 60% clones contained full-length cDNA inserts with an average insert size of 1.53-kb. A total of 51,072 colonies were arrayed in duplicate sets each with 133 384-well plates for sequencing and storage, respectively."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2246
                                                                                                                                                                                                                                                                                                                                                                      1766
                                                                                                                                                                                                                                                                                                                                                                                                                                               1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2425
                                                                                                                                                                                                                                                                                              GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1706
                                                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           819
                                                                                                                                                                                                                                                                                                                                66
blunt-ended using T4 DNA polymerase, digested with
                                                                                                                                                                                                                                                                                                                                                                                                         creaceadrecercadreciredaricariedreciencaderecentada en reacerce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCCCCACCAACAACCCCGATGCACCTGTCATGCTAGACCGCATCTTGCGCCTCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTACTCCATCCTCACTTGCTCCTTGCGCACTCTTCCTGATGGCAAAGTGGAAGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               760 GAGCATGTTGGAGGACATGTTTGAAAGTGTTCCAAAAGGAGACGCCCATCTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   820 TGGATATGCCACGATTGGAGCGATGAGCACTGCTCCAAGTTTTTGAAGAAGTGCTACGAA
                                                                                                                                                                                                                                                                                                                                GAAACCCAAATGACTCCCACCCAAGTCTCGGATGAGGAAGCCAACTTATTCGCCATGCAA
                                                                                                                                                                                                                                                                                                                                                                    CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGATCATGGCCAAAGCTGGCCCAGGTGCTTTCCTCCCCAAAAGAATTGGCTTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       340 TATGGTCTTGGCCCTGTCTGCAAATTCTTGACCAAGAATGAAGATGGCGTCACTCTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCCTCAGTCTCATGAATCAAGACAAGGTCCTTATGGAGAGCTGGTACTACTTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGGCACGGATCCTAGATTCAACAAGGTTTTCAACAGGGGAATGTCTGATCACTCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u> ATTACCATGAAGATTCTTGAGACCTATGATGGCTTTGAGGGACTCAAAACACTGGTC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGTTGGCGGCGGCTACTGGAGCTACGCTTAACATGCTTGTCACCAAGCACCCTTCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGGCATCAACTTTGATTTGCCTCATGTCATTGAGGATGCTCCTGCTTATCCTGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                         .;
3
                                                                                                                                                                                                                     Length 951;
                                                                                                                                                                                                                                                        Indela
                                                                                                                                                                                                                   Score 533; DB 10; I
Pred. No. 2.4e-142;
0; Mismatches 221;
                                                                                                                                                                                                                   tch 17.6%;
al Similarity 75.5%;
687; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                         100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       580
                                                                                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                                                                                    1707
                                                                                                                                                                                                                                                                                                                                                                                                                                             1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      700
                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                        Best Local
Matches 68
                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
```

```
1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCEGATCTTCCGGCTGCTGCCTACTCCGTGCTCACGTGCACCTCCGCGACCTCC 1923
                                                                                                                                                                                   n mRNA linear EST 15-JUN-2004 raimondii cDNA clone GR_Ea31G13 3',
                    938
                                                                                                                                                                                                                                                                                                                                Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicotyledons, rosids, eurosids II; Malvales, Malvaceae, Malvoideae, Gossypium. (bases 1 to 907)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /close lib="GR_Ba" /cnv.sport-6.1; Site 1: NotI; Site 2: /note="Vector: pCMV.Sport-6.1; Site 1: NotI; Site 2: BcoRv; Library made by Invitrogen with RNA supplied by Wendle lab. Directional cloned into NotI-EV. Colonies plated/picked by AGI. More glycerol clones held in -80.
880 GCTTTACCGGACAACGGAAAAGTAATTGTCGCAGA-TGTATTCTCCCAGATTACCCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGCGAACCTCTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          209 CCCCAAAAGAATTGGCTTCCCAGCTCCCCACCACCACCCGATGCACGCTGTCATGCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCCAACTIATTCGCCATGCAACTCACCAGTGCCTCAGTCCTTCCCATGGTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   149 CGGCCATAGAACTTGACCTGCTGGAGATCATGCCCAAAGCTGGCCCAGGTGCTTTCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCACGGGGGAAATCGCGGCACAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                      Kim,H., Yu,Y., Kudrna,D., Hatfield,J., Stum,D., Mueller,C.
Udall,J.A., Rapp,R.A., Wendel,J.F., Rao,K., Soderlund,C. a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 907;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Rod A. Wing
Arizona Genomics Institute
The University of Arizona
Forbes Building Room 303, Tucson, AZ, 85721-0036,
Tel: 520 626 9595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16.9%; Score 512; DB 8; I
Larity 75.6%; Pred. No. 3e-136;
Conservative 0; Mismatches 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Gossypium raimondii"
/mol_type="mRNA"
/db_xref="taxon:29730"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="GR_Ea31G13"
/tissue_type="whole seedlings"
/dev_stage="first_true_leaves"
/lab_host="DH108"
                                                                                                                                                                                   907 bp
Gossypium r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: rwing@genome.arizona.edu
Plate: 31 row: G column: 13.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Global assembly of Cotton ESTs
Unpublished (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ,
0
                                                                                                                                                                                                                                                           GI:48741783
                                                                                                                                                                                                        Вa
                                                                                                                                                                                                                                                                                             Gossypium raimondii
Gossypium raimondii
                                                                                                                                                                                                    ်|
ဗ
                                                        2555
                                                                                            948
                                                                                                                                                                                                    GR Ea31G13.r Gi
mRNA sequence.
CO072302
                                                        2546 ACGAGCCTAG
                                                                                          CCTAGCCTTG
                                                                                                                                                                                                                                                          CO072302.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Simi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1744
                                                                                          939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                               RESULT 3
CO072302
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                    g
                                                      ò
                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2486 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC 2545
```

g

Š

g 8

셤 ò

જે

g

셤 ઠે g δ g ò

ò

```
/clone lib="TWO"
// hote=_Wector: pcwV-SPORT6.1; Site 1: EcoRI; Site 2: Not1;
// hote=_Wector: pcwV-SPORT6.1; Site 1: EcoRI; Site 2: Not1;
// histurum. Tream Marker-1 (TM-I) plants were grown in
g. hirsurum. Tream Aakw University and in the field
at the USDA-ARS, New Orleans. The bolls were tagged and
harvested at 3 days before anthesis (-3DPA), the day of
anthesis (0 DPA), and 3 days post anthesis (3DPA) from a
pool of -20 plants. Total RNA was extracted from immature
ovules or fiber-bearing ovules. An equal amount of total
RNA from three samples was mixed and sent to Invitrogen
Corp. (Carbad, California) for full-length cDNA library
construction. Messenger RNA was isolated from the total
RNA using a filter syringe containing oligo (dT). The
first-strand cDNA was synthesized from is ug mRNA using
superScriptTMIII reverse transcriptase, and the
second-strand cDNA was synthesized using E. coli RNase H,
second-strand cDNA was synthesized using E. coli RNase H,
second-strand cDNA was synthesized using E. coli RNase H,
second-strand cDNA was synthesized sing E. coli RNase H,
second-strand cDNA was synthesized using E. coli RNase H,
second-strand cDNA was synthesized using E. coli RNase H,
second-strand cDNA was synthesized using E. coli RNase
plunt-ended using agarose gal electrophoresis, and
directionally cloned into the NoIT-EcoRV sites of the
pCWV-SPORTE.1. The ligated products were transformed using
supersecoRMAXTMDH10BT1 cells. The library contained 4.2x106
cfu with -100% of colony growth rate. It is setimated that
over 60% clones contained full-length cDNA inserts with an
average insert size of 1.53-kb. A total of 51,072 colonies
were arrayed in duplicate sets each with 133 384-well
plates for sequencing and storage, respectively.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGGICCTIGAAGGCGGAAICCCATICAACAAGGCGIACGGGAIGACCGCGIICGAGIAI 2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGGCACCGACCCGCGATTCAACAAGATCTTAACCGGGGAATGTCTGATCACTCCACC 2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2007 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT 2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gagarcardeccaageccegeccegecerrecrectecaegeaaarcececacae 1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to 3 days post anthesis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              282 Adcitachaceircticherrectricetricetricetresidenahaeresidenahaere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1947 TACGGCTTAGCGCCCGGTGTAGTAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rardectrrececererecaaarrerreaceaadaaceaadaadaadeerereree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCGAGCGCCTCCGTGCTCCCTAAAAGGCCGCCATCGAGATCGACTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     162 gagarcargachaaachgarccagargchritchrarccaaaagaagragchriccaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1887 AGCTACTCCGTGACGTGACGTCCCCCGGACCTCCCCGGATGGCAAGGTCGAGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ċiriecca dracarica drectece dractecte da a carectada e inda en de cere e cara da carectada e carectad</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 10; Length 930;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 74.5%; Pred. No. 5.5e-134;
Matches 662; Conservative 0; Mismatches 223;
/dev_stage="Immature ovules" (-3 DPA) with or without fibers" /clone_lib="TMO"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2403 AGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGA 2462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 31-OCT-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAG 2342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2343 ACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAA 2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gossypium hirsutum (upland cotton)
Gossypium hirsutum
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Bapernatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids II; Malvales; Malvaceae; Malvoideae; Gossypium.

1 (bases 1 to 930)
                                                                                                                                                                                                                                                                                                                                                 2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCT 2223
                                                                                                                                                                                                       ACGAGGACGGGGTCTCCATCGCCGCACTTGATGAACCAGGACAAAATCCTCATGG 2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   trorcasacaccerteraraaaggecarcaacirtaarrrocercargecatigage 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         749 Argerecreerratecresferesasearerresresasasearerresasasererresas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arderaricacecarricaaeracearecacededarecradarreaacaadeaerer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Z. Jeffrey Chen
The Chen lab: A Home of Polyploidy (http://polyploidy.tamu.edu)
Texas A&M University
Department of Soil & Crop Sciences, MS2474, College Station, TX
77842-2474, USA
Tel: 979 845 2359
Fax: 979 845 0456
                                                                                                                                  creareccaaacrecacacrecrarecretreceeeercretecaaarrecreacaaa
                                                                                                                                                                                                                                                                                                                                                                                     ACGGGATGACCGCGTTCGAGTATCATGGCACCGGACTCCAACAAGATCTTTAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGATGGCAAGGTCGAGCGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGA
                                                                                                                                                                                                                                                      TCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGA
                                                                                                                                                                                                                                                                                                                                             AAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCCATTCAACAAGGCGT
ACCGCATCTTGCGCCTCCTGGCTACCTACTCCATCCTCACTTGCTCCTTGCGCACTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yang, S.S., Cheung, F., Wei, N.E., Lee, J.J., Ha, M., Stelly, D.M., Thaxton, P., Sze, S.H., Triplett, B.A., Town, C.D. and Chen, Z.J. ESTs from immature ovule (-3 to 3 DPA) of G. hirsutum TM-1 Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DT566827 1MO GOSSYPium hirsutum CDNA, mRNA sequence.
EST1077467 TMO GOSSYPium hirsutum CDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTICCICAAGAACIGCIACGAIGCGCIICCCAACA 2498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTTTTTGAAGAGTGCTACGAAGCTTTGCCGGACA 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .930
/organism="Gossypium hirsutum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: zjchen@neo.tamu.edu
TIGR sequence name: GOAIE57TR
Seg primer: CAG GAA ACA GCT ATG ACC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:78346553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DT566827.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DT566827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         689
                                                                                                                                                                                                                                                                                                                                                           2044
                                                                                                                                                                                                                                                                                                                                                                                                                                449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2284
                                                                                                                                                                                                                         1984
                                                                                   1924
                                                                                                                                                        329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
DT566827
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
```

g

ઠે

ઠે

셤

1706

Gaps

4;

Indels

1766

161

2006

401

461

341

1946

1886

221

9

Gaps

1;

120

1965

180

2025

2085

240

300

2145

2205

420

2265

480

2324

540

2384

600

2444

2504

720

960

2564

2624

```
used in cloning as follows.
ATTACGGCCGGG-3' and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 AGGACAAGGTCCTCATGGAGAGGTGGTACTATTTGAAAGATGCAGTTCTTGATGGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2505 AGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGA
                                                                                                                                                                                                   GGCCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAGACCCCGACAACCCCG
                                                                                                                                                                                                                        1846 AGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGT
                                                                                                                                                                                                                                                                                                  GCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGCCTCTACGGCTTTAGCGCCCGGTGT
                                                                                                                                                                                                                                                                                                                                                                          GCAAGTTCTTGGTCAAGAACGAGGACGGGTCTCCATCGCCGCACTCAACTTGATGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAAGTACTTGACTAGGAACGAAGATGGGGTGTCTGTAGCCCCCTCTTCTCCTCATGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541 IGCTCARGTTATTGATGATGCCCCATCTTATCCTGGTGTGGAGAATGTTGGGGGGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721 AGGTAATTGTTGCTGAATGCATCCTTCCTGTGCCCCCAGACACCAGCCTAGCCACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361 rcaacaaggrerrcaacaarggaargrercacrerrcacrerraccargaaaarre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rrdakaccracakaccrirrackacccrcaarrerrarrarrarrarrarrarra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2266 GGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481 GAGCCACCCTTAACATGATCATATCCAAATACCCCACTATTAAGGCCATTAACTTTGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2325 CGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTAAGCACGTCGGAGGCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2385 TGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTTTGTGAGTGTCCCAPAGGGAGATGCCATCTTCATGAAGTGGATATGCCATGATTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2445 GTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGATGCTCATTGCTTGAAGTTCTTGAAGAACTGCTATCAGGCACTTCCAGACAATGGGA
                 S'-AAGCAGTGGTATCAACGCAGAGTGGCCATTACGGCCGGG-3' and S'-ATTCTAGAGCCGAGGGGCCGACATTATGTATC TO INN-3'. Library we constructed using the Clontech Creator SWART kit and size-selected to contain the 0.5-3 kb size fraction."
                                                                                                                           Score 504; DB 4; Length 848;
Pred. No. 6.1e-134;
); Mismatches 205; Indels
                                                                                                                                                               0;
                                                                                                                             16.6%;
ilarity 75.6%;
Conservative 0
                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2625 AGAA 2628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAA
                                                                                                                                                Best Local Simi
Matches 638;
                                                                                                                                                                                                     1786
                                                                                                                                                                                                                                                                                                                                                                                                                         1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301 '
                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                   1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2146
                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2206
                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                            ORIGIN
                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAB30007_IID_FR_F02 Cabernet Sauvignon Berry Stage I - CAB3 Vitis vinifera cDNA clone CAB30007_IID_FR_F02 5', mRNA sequence. CB975481
CB975481
CE975481.1 GI:30298687
                                                                                                            2306
                                                                                                                                                                                    2362
                                                                                                                                                                                                                                                        2422
                                                                                                                                                                                                                                                                                                                                AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC 2482
                                                                                                                                                                                                                                                                                            821
                                                                                                                                                                                                                                                                                                                                                                      881
                                                                           641
                                                                                                                                              701
                                                                                                                                                                                                                    761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; coreside; Vitaceae; Vitis.

1 (bases 1 to 848)
Goes da Silva,F., Iandolino,A., Lim,H., Baek,J., Leslie,A., Xu,J., Jones, K. and Cook,D.

Expressed sequence tags from Vitis vinifera 'Cabernet sauvignon' berries at various developmental stages
Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /dlone libe content Sauvignon Berry Stage I - CAB3"
/dlone libe content Sauvignon Berry State 1: Sfil; Site 2:
Sfil; CAB3 is a cDNA library of Vitis Vinifera Cabernet
Sauvignon, Clone 8 berries. Samples were collected after
berry set from field-grown vines during stage I of berry
growth, 17 days after full bloom. The average berry size
was 6 milimeters. Sampled vines were located at the
University of California, Davis, Experimental Vineyard.
CDNAs were made by oligo-dT priming and directionally
                                                                                                          GATGTCGGAGGCGCCACTGCGCCCGTGATGATCGTTGCCAAATACCCATCAATG
                                    ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                            582 ATCACCATGAAGAAGATTCTCGATACATATGATGGTTTCCAAGGGCTAAAAACATTGGTC
                                                                                                                                            642 GATGTTGGCGGTGGTACCGGTGCCACGCTTAGCATGATCGTCTCTAAGTACCCCACCATA
                                                                                                                                                                                                                                                                                 AAGTGGATATGTCATGATTGGAGCGACGAACACTGCGCCCAAGTTTTTGAAGAACTGTTTT
CATGGCACTGATCCTAGATTCAACAAGGTTTTCAACAGGGGAATGTCTGATCACTTACC
                                                                                                                                                                                                                  AAAGGCATTAACTTTGATTTGCCTCATTGAGGATGCTCCTAGCTGTCCTGTAGGT
                                                                                                                                                                                                                                                        GTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG
                                                                                                                                                                                  AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                          GATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCC 2531
                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Vitis vinifera"
/mol type="mRNA"
culiivar="cabernet Sauvignon"
/db xref="taxon:29760"
/clone="CAB30007 IID_Fa_F02"
/sex="Hermaphrodite"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Douglas Cook, PhD
CAES Genome Facility
UC Davis, Plant Pathology
One Shields Ave, Davis, CA 95616, USA
Tel: 530 754 651
Fax: 530 754 6617
Email: drcook@ucdavis.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /dev_stage="Berry stage I"
/lab_host="DH5alpha"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: drcook@ucdavis.edu
Seg primer: ACGGTACCGGACATATGCC.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . .848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vitis vinifera
Vitis vinifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST
                                     2187
                                                                                                                                                                                                                    702
                                                                                                            2247
                                                                                                                                                                                2307
                                                                                                                                                                                                                                                        2363
                                                                                                                                                                                                                                                                                                                                2423
                                                                                                                                                                                                                                                                                                                                                                                                        2483
 522
                                                                                                                                                                                                                                                                                            762
                                                                                                                                                                                                                                                                                                                                                                    822
                                                                                                                                                                                                                                                                                                                                                                                                                                            882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
CB975481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                    ઠે
                                                                    g
                                                                                                        ò
                                                                                                                                    g
                                                                                                                                                                                δ
                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                       요
```

```
COU71813 853 bp mRNA linear EST 15-JUN-2004 GR Ea30H18.r GR Ea Gossypium raimondii cDNA clone GR Ea30H18 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gossypium raimondii
Spermatophyta; Viridiplantae; Streptophyta; Gore eudicotyledons; Core eudicotyledons; Coresides I to 831; Malvales; Malvaceae; Malvoideae; Gossypium.
Kim, H., Yu, Y., Kudrna, D., Hatfield, J., Stum, D., Mueller, C., Kim, H., Yu, Y., Rapp, R.A., Wendel, J.F., Rao, K., Soderlund, C. and
                                                                                                                                                                                                                                                                                                                                                                  2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2424
                                                                                                                                                                                                                                                                                 2246 CGATGTCGGAGGCGGCACTGGGGCCGTGCTTGATCGTTGCCAAATACCCATCAAT 2305
                                                                                                                                                                                                                                                                                                                                                                                                          788
                                                                                                                                                                                                                                                                                                                          728
CCCTCTCTGTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGA 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2425 GIGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     849 Gricialiarieccalicaritégaeceaceacecriceraaaaritéricaadaariecratea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1...cranism="Gossypium raimondii"
/rorganism="Gossypium raimondii"
/mol_type="mRNA"
/do="GR_saxon:29730"
/clone="GR_say1018"
/tissue_type="whole seedlings"
/dev_stage="first_true_leaves"
/lab_bost="birst_true_leaves"
/lab_bost="birst_grain"
/clone_lib="GR_grain"
/note="vector: pcMv.SPORT-6.1; Site_1: NotI; Site_2:
                                                                                                                                                                                                                                           609 catraccardaadadcerecreaceaceracaadgecrirdaaggecreacerecriger
                                                                                                                                                                                                                                                                                                                                                                  2306 GAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGT
                                                                                                                                                                                                                                                                                                                                                                                           2365 CAAGCACGICGGAGGCGACAIGIICGICAGCGIICCAAAGGGAGAIGCCAIIIICAIGAA
                                                                   CATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGT
                                                                                                                                                                                                                                                                                                                          669 gdaigirgengengeakchedaechercerraackecahedrechaanaececricaan
                                        TGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTA
                                                                                                                      2126 TCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85721-0036, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2485 IGCGCTICCCAACAAIGGAAAGGIGAICGIIGCAGAGIGCGIACICCCIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  909 cġċcrigċċggaaakaacgcaggrachtariargagtgcarrcrrccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2004)
Contact: Rod A. Wing
Arizona Genomics Institute
The University of Arizona
Forbes Building Room 303, Tucson, AZ, 85
Fax: 520 626 9595
Fax: 520 621 1259
Fax: 520 621 1259
Pail: rwingegenome.arizona.edu
Plate: 30 row: H column: 18.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wing, R.A. Global assembly of Cotton ESTs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CO071813.1 GI:48741294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST.
                                                     2066
                                                                                                                                                                                                                  2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
CO071813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    合
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                       g
                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                    qq
                                                                                                                             ð
                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1826 GCTCCCGACCCAGAACCCCGAGGCACCGGTCATGCTCGACCGGATCTTCCGGCTGCTGGC 1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCTACTCCGTGCTCCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCT 1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCACTCAACTIGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGA 2065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1767 GAGATCATGGCCAAGGACGGGCCGGGCG-CGTTCCTCCACGGGGAAATCGCGGCACA 1825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            369 GTATGGCCTTGCTCCTGTTTGCAAATTCTTGACCAAGAACGAGGACGGTGTCTCTGTCAG 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gaaacrcadaricacraccaacrcaderarcadardaadaddecacaccrcrrreccardcaa 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 248
                                    DV465073 958 bp mRNA linear EST 20-OCT-2005
MTUNUL1.P34.F07 NUL Populus fremontii x Populus angustifolia GDNA,
                                                                                                                                                        Populus fremontii x Populus angustifolia
Populus fremontii x Populus angustifolia
Variatiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons;
Cosids; eurosids I; Malpighiales; Salicaceae; Saliceae; Populus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               249 CCTCCCTACCAAAAACCCTGATGCCCTGTCATGGTAAGACCGTATCTTGCGCCTCCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          309 radcháchccahnchnáchtechchcaaadanchnéchdahdeadadhreadadh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1946 CTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGC
                                                                                                                                                                                                                                                                                                                                             Unpublished (2005)
Contact: Chung-Jui Teai
Biotech Research Center
Michigan Technological University, School of Forest Resources &
Environmental Science
1400 Townsend Drive, Houghton, MI 49931-1295, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chadeceadrochicadrochadearcheanadadechirdaacrodaechen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gaaatcargecraaagcreeccreerectricriereccacarcreagaractreca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'organism="Populus fremontii x Populus angustifolia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                     1 (bases 1 to 958)
Harding, S.A., Elliott, S.G., Montag, J.D. and Tsai, C.-J.
Expressed sequence tags from Populus fremontii x Populus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16.3%; Score 494.8; DB 10; Length 958; llarity 73.7%; Pred. No. 3e-131; Conservative 0; Mismatches 232; Indels 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                           DV465073.1 GI:77989246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chtsai@mtu.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tel: 906 487 2914
Fax: 906 487 2915
                                                                                       mRNA sequence.
DV465073
                                                                                                                                                                                                                                                                                                                                  angustifolia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                             VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Loca
Matches
                                                                 DEFINITION
                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                               JV465073
                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

셤

ò

ò

g

원 à 셤 ò ò

```
Ea Gossypium raimondii cDNA clone GR_Ea47M18 3',
                                                                                                                                                                    eudicotyledons;
                                                                                                                                              Embryophyta; Tracheophyta;
                                                                                                                                            Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyt
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicotyledon
rosids, eurosids II, Malvales, Malvaceae, Malvoideae, Gossypium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="GR_Ea" for Sport-6.1; Site 1: NotI; Site 2: /note="Vector: pCMV.SPORT-6.1; Site 1: NotI; Site 2: EcoRV; Library made by Invitrogen with RNA supplied by Wendle lab. Directional cloned into NotI-EV. Colonies plated/picked by AGI. More glycerol clones held in -80.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCACCAGTGCCTCCAGTCCTTCCCATGGTCCTCAAGTCGGCCATAGAACTTGACCTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAACCCAAATGACTCCCACCCAAGTCTCGGATGAGGAAGCCAACTTATTCGCCATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1707 CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATGGAGATCGACCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1767 GAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTCCACGGGGGAAATCGCGGGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     172 GAGATCATGGCCAAAGCTGGCCCAGGTGCTTTCCTCCCCAAAAGAATTGGCTTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCCCGACCCCAGACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          creceaecaecaececearecaecererearecraeaececarerreeecreeer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCTACTCCGTGCTCCGCGCCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          292 ACCIACTCCATCCTCACTIGCTCCTTGCCCACTCTTCCTGATGGCAAAGTGGAGAGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 352 TAIGGICTIGGCCCCTGTCTGCTGACCAAGAATGAAGAAGAAGAAGACGCTCACTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            eccrcagrereargaarcaagacaagerecrraregagagagreracracragaaagar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACGGCTTAGCGCCGGTGTGCAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                     1 (bases 1 to 864)
Kim, H., Yu, Y., Kudrna, D., Hatfield, J., Stum, D., Mueller, C.,
Udall, J.A., Rapp, R.A., Wendel, J.F., Rao, K., Soderlund, C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 864;
                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                   Global assembly of Cotton ESTs
Unpublished (2004)
Contact: Rod A. Wildow
Arizona Genomics Institute
The University of Arizona
Forbes Building Room 303, Tucson, AZ, 85721-0036, 171: 520 626 9595
Fax: 520 621 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 489.6; DB 8;
Pred. No. 9.3e-130;
0; Mismatches 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Gossypium raimondii"
mol_type="mkm"
/db_xref="taxon:29730"
/clone="GR_Ea47M18"
/fissue_type="whole seedlings"
/dev_stage="first true leaves"
/lab_nost="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: rwing@genome.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plate: 47 row: M column: 18.
Location/Qualifiers
                                                            C0082948.1 GI:48752429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16.2%;
75.9%;
                                                                                                       Gossypium raimondii
Gossypium raimondii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 75.9
Matches 617; Conservative
Ea47M18.r GR
               mRNA sequence.
                                                                                                                                                                                                                                                                          Wing, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1947
                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
  DEFINITION
                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2380
                                                                                                                                                                                        1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2261
                                                                                                                                                                                                                                                                          1781
                                                                                                                                                                                                                                                                                                                                                            1841
                                                                                                                                                                                                                                                                                                                                                                                                                                          1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCG 2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             663
                                                                                                                                                                                                                                                                                         GTCCTCCCCATGGTCCTCAAATCAGCCATTGAACTTGACTTGCTGGAGATCATGGCCAAA 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63
EcoRV; Library made by Invitrogen with RNA supplied by Wendle lab. Directional cloned into NotI-EV. Colonies plated/picked by AGI. More glycerol clones held in -80.
                                                                                                                                                                                                                                                                      GTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCGGTGCCACGCTTAGCATGATCGTCTCTAAGTACCCCACCATAAAGGCATTAACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCC
                                                                                                                                                                                                                                 CCCACCCAAGTCTCAGATGAGGAAGCCCACTTATTCGCTATGCAACTTGCCAGTGCATCA
                                                                                                                                                                                                                                                                                                                                                            GACGGGCCGGGCGCTTCCTCTCCACGGGGGAATCGCGGCACAGGTCCCGACCCAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                   CCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cercandecacecercaneerecacenarienrecercecerecenaceracaacerecene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTTGCTCCTTGCGTACCCTTCCTGATGGCAAAGTGGAAAGACTATATGGCCTTGGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           484 AGATTCAACAAGGTTTTCAACAAGGGAATGTCTGATCACTCTACCATCACCATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTCTCGATACATATGATGGTTTCCAAGGACTAAAAAACATTGGTCGATGTTGGCGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GA-CCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATTTGCCTCATGTCATTGAGGATGCTCCTAGCTGTCCCGGTGTGGAGCATGTTGGTGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAAT
                                                                                                                                                 Gaps
                                                                                                                                                 1,
                                                                                                       Length 853;
                                                                                                                                              Indels
                                                                                                     Score 490.8; DB 8;
Pred. No. 4.2e-130;
0; Mismatches 217;
                                                                                                     Query Match
Best Local Similarity 74.4%;
Matches 632; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAAAGGTGA 2510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGAAAGTGA 853
                                                                                                                                                                                        1662
                                                                                                                                                                                                                                                                                                                                                                                                 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2501
                                                                                                                                                                                                                                                                          1722
                                                                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                          1782
                                                                                                                                                                                                                                                                                                                                                                                                                                          1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
CO082948
LOCUS
                                                              ORIGIN
```

g

8

ઠ 유 ઠે g ઠે 셤

셤 8 g ઠે g Š 요

ઠે

셤 ò g ò g ઠે 요

ò

1706

1766

171

1826

231

1886

1946

351

291

2006

2066

471

411

2067 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2126

EST 15-JUN-2004

linear

mRNA

ď 864

C0082948

셤

ઠે

a

ò

ò

```
AAAGGAATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  522
                                                                                                                                                                                                                                                                                                                                                                                                                                                         222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  462
                                                                                                                                                                                                                                                                                                            42
                                                                                                                                                                                                                                                                                                                                    1707
                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2246
                                                                                                                                                                               AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2365
                                                                                                                                                                                                                            2366 AAGCACGICGGAGGCGACAIGIICGICGAGGCGAAGGGAGGAGGCCAITITCAIGAAG 2425
                                                                                                                                                                                                                                                                                                                                                               EST 31-OCT-2005
                                    2186
                                                                                                                                GATGICGGAGGGGGCACTGGCGGGGCCGTGGATGACCAAATACCCATCAATG 2306
                                                                                                                                                                                                                                                                                                                                                                                                                 EST.

Gossypium hirsutum (upland cotton)

Gossypium hirsutum

Gossypium hirsutum

Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Bukaryota; Viridiplantae; Streptophyta; Core eudicotyledons;

Spermatophyta; Magnollophyta; eudicotyledons;

Core eudicotyledons;

rosids; eurosids II; Malvales; Malvaceae; Malvoideae; Gossypium.

1 (bases 1 to 895)

1 (bases 1 to 895)

2 (Changer, Wei, N. E., Lee, J.J., Ha, M., Stelly, D. M.,

Thaxton, P., Sze, S. H., Triplett, B. A., Town, C.D. and Chen, Z.J.

ESTS from immature ovule (-3 to 3 DPA) of G. hirsutum TM-1
                                                                                                                                                    AAGGGCATCAACTTTGATTTGCCTCATGATGAGGATGCTCCTGCTTATCCTGGTGTG 771
                                                                                                                                                                                                                                                      831
                                                            591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2005)
Contact: Z. Jeffrey Chen
The Chen lab: A Home of Polyploidy (http://polyploidy.tamu.edu)
Texas ARM University
Department of Soil & Crop Sciences, MS2474, College Station, TX
77842-2474, USA
                                                                                                                                                                                                                                                 772 GAGCATGTTGGTGGAGACATGTTTCAAAGTGTTCCANAAGGAGACGCCATCTTCATGAAG
CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACCACC
                                                   ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                               895 bp mRNA linear EE EST1068649 TMO Gossypium hirsutum cDNA, mRNA sequence. DT558009 GI:78337735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Gossypium hirsutum"
/mol type="mRNA"
/cultivar="Texas Maker-1 (TM-1)"
/db_xref="taxon:3635"
                                                                                                                                                                                                                                                                                TGGATATGCCATGACTGGAGTGACGACCATTGC 2458
                                                                                                                                                                                                                                                                                              TIGR sequence name: GOAF684TRC
Seq primer: CAG GAA ACA GCT ATG ACC.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 979 862 2359
Fax: 979 845 0456
Email: zjchen@neo.tamu.edu
TIGR sequence name: GOAF684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .895
                                                                                                                                        2247
                                                                                                                                                                                       2307
                                                                                                                                                                                                             712
                                                                                                                                                                                                                                                                                    2426
                                                                 532
                                                                                         2187
                                                                                                                                                               652
                                          2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                              RESULT 9
DT558009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                               요
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                    ò
                                                                                                          g
                                                                                                                                       ઠે
                                                                                                                                                                                   ò
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                       g
                                                                 셤
                                                                                         ð
                                         ઠ
```

```
RNA from three samples was mixed and sent to Invitrogen Corp. (Carsbad, California) for full-length cDNA library construction. Messenger RNA was isolated from the total RNA using a filter syringe containing oligo (dT). The first-etrand cDNA was synthesized from 15 ug mRNA using SuperScriptTMII reverse transcriptase, and the New Second-strand cDNA was synthesized using E. coli RNase H, DNA polymerase I, and DNA ligase. The double-stranded cDNA WAS blunt-ended using TA DNA polymerase, digested with NotI, size-selected using agarose gel electrophoresis, and directionally cloned using agarose gel electrophoresis, and directionally cloned using agarose gel electrophoresis, and polyw-SDORTG. I. The ligated products were transformed using ELECTROMAXTMDH10BT1 cells. The library contained 4.2x106 cfu with ~100% of colony growth rate. It is estimated that over 60% clones contained full-length cDNA inserts with an average insert size of 1.53-kb. A total of 51,072 colonies were arrayed in duplicate sets each with 133 384 well plates for sequencing and storage, respectively."
```

7 Length 895; tch al Similarity 74.8%; Pred. No. 1.2e-129; 639; Conservative 0; Mismatches 213; Indels

1826 1827 CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGGATCTTCCGGGCTGCTGGCC 1886 221 281 101 102 chreccaendachtachtchtchadarchaantaetaatanaachtache 1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG <u>daaacırcaaatigaceceacceaecreteagardagaagecaacraatregeratecaa</u> 1767 GAGATCAIGGCCAAGGACGGCCGCGGTTCCTCCACGGGGGAAATCGCGGCACAG 162 gadaitdiiddecdaadendenteadenderrireriereceaaaadaadigeerreead chcccaccaaccaaccrearecacearecerarecresacearicrisecrerecereser CTGGCGAGCGCCTCCGTGCTCCCTATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC

2066 461 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT

401

2187 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC

2246

581

GATGICGGAGGCGCCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG 2306

402

2103

522

2163

582

2223

642

2283

702

2342

762

2460

셤

ò

셤

ò

```
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermacophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids II; Sapindales; Rutaceae; Citrus x Poncirus.
1 (bases I to 961)
Close, T.J., Roose, M.L., Becker, O., Darsow, J., Federici, C.F.,
Fenton, R.D., Wanamaker, S., Choi, Y.G and Kingan, T.
Development of EST Resources and New Genetic Markers for California
Citrus - Swingle citrumelo nematode-challenged roots - UCRCP01
Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2343 Acececencecriceregienca Acecece Acece Acece Acece Acece Acece Acece Acece Acec Ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CX664219
UCRCP01 008 G04 T7 Swingle citrumelo nematode-challenged root cDNA library - UCRCP01 Citrus x paradisi x Poncirus trifoliata cDNA clone UCRCP01 008 T7 G04, mRNA sequence.
CCCCAAAAGAATTGGCTTCCCAGCTCCCCACCAGCAACCCCGATGCACCTGTCATGCTAG 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           763 Argerecerectraricereneneakacarerregregadadarerrigaaakererrecan 822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2104 ACGGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  583 GGGGAATGICTGATCACTCTACCATTACCATGAAGAAGATTCTTGAGACCTATGATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2284 TCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAG
                                                                                       1864 ACCGGATCTTCCGGCTGCTGCCCAGCTACTCCGTGCTCCACGTGCACCCTCCGCGACCTCC
                                                                                                                                                                 283 Accedatoriscicorocoracoracitocarcorocario en accedatoriscico de contra d
                                                                                                                                                                                                                                                                                                                                       343 creareccaaagrecaagacrerarecrerrescerererecaaarrecreacaada
                                                                                                                                                                                                                                                                                                                                                                                                                              ACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             403 ATGAAGATGGCGTCACTCTTTCCGCCCTCAGTCTGAATCAAGACAAGGTCCTTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2044 AAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGGAATCCCATTCAACAAGGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2164 GGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCŢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2224 TCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     703 TrGTCACCAAGCACCCTTCTATAAAGGGCATCAACTTTGATTTGCCTCATGTCATTGAGG
                                                                                                                                                                                                                                                        1924 CCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               463 AGAGCTGGTACTACTTGAAAGATGCCGTGCTGGAAGGTGGAATTCCCTTCAACAAAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGAGACGCCATCTTCATGAAGTGGATATTCCACGATTGGAGTGATGAGCACTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Timothy J. Close
Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: timothy.close@ucr.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tel: 909-787-3318
Fax: 909-787-4437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            643
                                                                                                                                                                                                                                                                                                                                                                                                                              1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
CX664219
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     요
                                                             8
                                                                                                                                                                                                                                                        à
                                                                                                                                   2484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            880 bp mRNA linear EST 16-JUN-2004
Ea Gossypium raimondii cDNA clone GR_Ea05J07 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Wagnoliophyta; eudicotyledons, core eudicotyledons, rosids, eurosids II; Malvales, Malvaceae, Malvoideae, Gossypium.

1. (baess 1 to 880)

Kim, H., Yu, Y., Kudrna, D., Hatfield, J., Stum, D., Mueller, C., Wanglall, J. A., Rapp, R. A., Wendel, J. F., Rao, K., Soderlund, C. and Wing, R. A.
                                                821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="GR_Ba"
/note="Vector: pCMV.SPORT-6.1; Site_1: NotI; Site_2:
BCoRV; Library made by Invitrogen with RNA supplied by
Wendle lab. Directional cloned into NotI-BV. Colonies
plated/picked by AGI. More glycerol clones held in -80.
GAGCATGTTGGTGGAGACATGTTTGTAAGTGTACCAAAAGGAGAGGTGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1624 AGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1684 AGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCCAACTTATTCGCCATGCAACTCACCAGTGCCTCCAGTCCTTCCCATGGTCCTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCACGGGGGAAAATGGGGGGCACAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCG
                                                                                                                                                                                                                 822 TGGATATGTCATGATTGGGAGCGACGAACACTGCGCCAAGTTTTTGAAGAACTGCTATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1744 CCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGCCCGGGCGCGTTCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cecccatacaactreaccrecrecacatearcateccaaaccreeccaegrecritecre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Global assembly of Cotton BSTs
Unpublished (2004)
Contact: Rod A. Wing
Arizona Genomics Institute
The University of Arizona
Forbes Building Room 303, Tucson, AZ, 85721-0036, USA
Flat: 520 622 9595
Fax: 520 621 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 880;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16.1%; Score 489; DB 8; Length 88
Llarity 75.5%; Pred. No. 1.4e-129;
Conservative 0; Mismatches 201; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Gossypium raimondii"
mol_type="mRNN"
db_xref="taxon:2970"
clone="GR_Ea05J07"
/tissue_type="whole seedlings"
/dev stage="first true leaves"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: rwing@genome.arizona.edu
Plate: 05 row: J column: 07.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CO087218.1 GI:48777852
                                                                                                                                                                                                                                                                                                    2485 TGCGCTTCCCAACA 2498
                                                                                                                                                                                                                                                                                                                                                                                   882 AGCTTTGCCAGACA 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gossypium raimondii
Gossypium raimondii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GR Ea05J07.f GR mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CO087218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                633;
                                                                                                                              2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1804
                                                762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CO087218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
```

셤 ઠે g ò 유

ò

```
UCRCPOL 037 E09 T7 Swingle citrumelo nematode-challenged root cDNA library - UCRCPOL Citrus x paradish x Poncirus trifoliata cDNA clone UCRCPOL 037 T7_E09, mRNA sequence.

CX668414

CX668414.1 GI:57927201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids II; Sapindales; Rutaceae; Citrus x Poncirus.
1 (bases I to 931)
1 (bases I to 931)
1 (close, F. J., Roose, M. L., Becker, O., Darsow, J., Federici, C. F.,
Fenton, R. D., Wanamaker, S., Choi, Y. G and Kingan, T.
Bevelopment of EST Resources and New Genetic Markers for California
Citrus - Swingle citrumelo nematode-challenged roots - UCRCP01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2379 GCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCATG 2438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2439 ACTGGAGTGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACA 2498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            859 Arriddadidardaddacridddaaarricrridaadaacriddrardaaddacriddaaa 918
379 CCGTTIGIAAATICCICACIAAAATGAAGAIGGIGITACACTTICCGAICTTIGICICA 438
                                                                                                           AGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      679 GAATIGGAGCCACACTIAACAIGATIATCICCAAGIAICCAICGAITAAAGGCAICAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAG
                                                                                                                                                                                                     2080 GCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACC
                                                                                                                                                                                                                                           2140 CGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                      <u>AAATTCTTGAAAATTACAAAGGGTTTGAAGGCCTCAACTCAGTTGTCGACGTTGTGGTG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2260 GCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCCATCAATGAAAGGGATCAACT
                                                                     TGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'organism="Citrus x paradisi x Poncirus trifoliata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2499 AregaAAGGreArcGrrGCAGAGTGCGTACTCCCTGTGTACCC 2541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Argggaaagrcafrgfrgcrgaarcrarccrccagraacccc 961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (2005)
Contact: Timothy J. Close
Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:309804"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               il: timothy.close@ucr.edu
primer: T7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mol_type="mRNA"
/cultivar="Swingle"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 909-787-3318
Fax: 909-787-4437
Email: timothy.cl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       919
                                                                                      2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
CX668414
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                          셤
                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                          8
                                                                                                              /db xref="taxon:30804"
/db xref="taxon:30804"
/clone="UCRCP01_008_T7_G04"
/tissue_type="root"
/dev stage="seedling"
/lab_bost="E. coli TUC121"
/clone|lb="Swingle citrumelo nematode-challenged root
/clone|lb="Swingle citrumelo nematode-challenged root
cDNA library - UCRCP01"
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
Site: 1 EcoR1; Site: 2: XhOi; Twelve seedlings were
ransplanted from comes to 4 inch pots of sand mix, then
grown in greenhouses (Darsow, Becker lab). Citrus
nematodes (Tylenchulus semipenitrans) were extracted from
contaminated soil from the UC Riverside Citrus Research
contaminated soil from the UC Riverside Citrus Research
conter then suspended in water and added to pots (Darsow).
Growing roots were collected by clipping them away from
the old root ball 24 hr and 4 days after inoculation
(Rederici). Total RNA was extracted using Concert Plant
RNA Reagent (Invitrogen) followed by RNeasy (Qiagen), and
equal amount of RNA was pooled from each of the two
collection times, poly(A) RNA was purified using Oligotex
(Qiagen), a cDNA library was made using a cDNA synthesis
kit (Stratagene), then 0.45 million primary lambda cDNA
clones were in vivo excised to give a population of
pBluescript SK(-) phagemids (Fenton, Close lab). Phagemids
were plated, plasmid DNA purified, cDNA clones archived,
and DNA sequences determined bi-directionally using an
AB1370 at the University of California Riverside
Instrumentation Facility, (Choi, Kingan). Chromatogram
files were downloaded by FTP by Close, then processed by
wanamaker (Close lab) using the HarvEST pipeline
(http://harvest.ucr.edu) to remove vector and cloning
oligo sequences and various contaminants, and to trim to
high quality region. Secuences that retained a phred 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       high quality region. Sequences that retained a phred 17 region of at least 100 bases were assembled, then chimeras were removed following manual inspection of assemblies (Close, Roose, Wanamaker). Sequences that survived all removal steps were submitted to GenBank."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGC 1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCACGIGCACCTICCGGGACCTCCCCGAIGGCAAGGICGAGCGGCTCIACGGCTIAGCGC 1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COGTOTOCAAGTICTTGGTCAAGAACGAGGACGGGTCTCCATCGCCGCACTCAACTTGA 2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCCAGATGCCCATATCGTGCTTGATCGTATATTGCGCCTTCTGGCGAGCTATTCAGTCC 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           trantide retrececanterececanes as a mana a mana de la m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGACGGGCCGGGCTTCCTCTCCACGGGGAAATCGCGGGCACAGCTCCCGACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1660 CCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              140 cagicrisccialidetrcicalarcaccarisalerrialitatadalerical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200 AAGCTGGGCCCGATGCTTTCATGTCTCCAAAAGACATAGCTTCTCAGGCTGCCCACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1600 GGAAGAGAGAGAGAGAGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Grccaecccaaecrceardaadaecaaacrcrregccarecaarraaccaerecr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                               organism="Citrus x paradisi x Poncirus trifoliata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .;
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 488.6; DB 9; Length 961;
Pred. No. 1.9e-129;
0; Mismatches 269; Indels 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16.1%; Score 488.6;
ilarity 71.3%; Pred. No. 1.96
Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Simil
Matches 672; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

2319

738

2259

678

618

2270

683

743

803

```
UCRCPO1 007 F10 T7 Swingle citrumelo nematode-challenged root cDNA library - UCRCPO1 Citrus x paradisi x Poncirus trifoliata cDNA clone UCRCPO1_007_T7_F10, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Close, T.J., Roose, M.L., Becker, O., Darsow, J., Federici, C.F., Fenton, R.D., Wanamaker, S., Choi, Y.G. and Kingan, T.

Development of EST Resources and New Genetic Markers for California Citrus - Swingle citrumelo nematode-challenged roots - UCRCP01
                                                                                                                                                                                                                                                                                                                                                                            2271 GTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGA-CCGCCC 2329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTC 2389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2390 GTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGAC 2449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2450 GACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTG 2509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Sukaryota, Viridiplantae, Streptophyta, Embryophyta; Tracheophyta,
Spermatophyta; Magnoliophyta; eudicotyledons;
rosids; eurosids II; Sapindales; Rutaceae; Citrus x Poncirus.
444 AAGGTTCTCATGGAGAGCTGGTACTACTTAAAAGATGCAGTGCTTGAAGGTGGCATTCCA 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             864 GAGCACTGCGTGAAATTCTTGAAGAACTGCTATGAAGCACTTCCAGTAAATGGGAAAGTC 923
                                                                                                                                                                                                                                                                                                                                                                                                          744 carerratroagarecrecagerrirecresiones carerragadas and retra
                                                                                                    504 ritaacaaggccrargggargargcarrcgarraccarggcaaagarcraagarrcaac
                                                                                                                                                            2151 AAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAA
                                                                                                                                                                                                               564 Aagartricaacaarggaargreererearreacarraceargaagaaarrerrgaa
                                                                                                                                                                                                                                                                    ACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCC
                                                                                                                                                                                                                                                                                                                      624 AATTACAAAGGGTTTGAAGGCCTCAACTCAGTTGTCGACGTTGGTGGTGGAATTGGAGCC

    .964
/organism="Citrus x paradisi x Poncirus trifoliata"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mol_type="mRNA"

/culfitvar=%swingle"

/db xref="taxon:309804"

/clone="UCRCP01_007_T7_F10"

/tissue_type="root"

/dev_stage="seedling"

/lab_host="E. coli TUC121"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Timothy J. Close
Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: timothy.close@ucr.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CX664056.1 GI:57922014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fax: 909-787-4437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2510 ATCGTTGC 2517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seq primer: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 909-787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CX664056
                                                                                                                                                                                                                                                                       2211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        924
                                                        2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
CX664056/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                               δ
                                                                                                       ద
                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                       /dev stage="root"
//dev stage="root"
//dev stage="root"
//dev stage="seedling"
//lab_host="E. coli TUC121"
//clone lib="Swingle citrumelo nematode-challenged root
cDNA library - URCF01"
//note="Vector: Lambda Uni-ZAP XR, excised phagemid;
Site 1: ECORI; Site 2: XhOi; Twelve seedlings were
transplanted from cones to 4 inch pots of sand mix, then
grown in greenhouses (Darsow, Becker lab). Citrus
nematodes (Tylenchulus semipenitrans) were extracted from
contaminated soil from the UC Riverside Citrus Research
in cot ball 24 hr and 4 days after inoculation
(Federici). Total RNA was extracted using Concert Plant
RNA Reagent (Invitrogen)followed by RNeasy (Qiagen), an
equal amount of RNA was pooled from each of the two
collection times, poly(A) RNA was purified using oligotex
(Qiagen), a cDNA library was made using a cDNA synthesis
kit (Strategenel), then O.45 million primary lambda cDNA
clones were in vivo excised to give a population of
pBluescript SK(-) phagemide (Fenton, Close lab). Phagemids
were plated, plasmid DNA purified, cDNA clones archived,
and DNA sequences determined bi-directionally using an
AB13730 at the University of California Riverside
Institute of Integrative Genome Biology Genomics Core
Institute of Integrative Genome Biology Genomics Core
Institute of Integrative Genome Biology Genomics Core
Institute of PNA west.ucr.edu) to remove vector and cloning
cligo sequences and various contaminants, and to trim to a
high quality region. Sequences that retained a phred 17
region of at least 100 bases were assembled, then chimeras
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCTCGGACGACGAGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCC 1730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1731 ATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCG 1790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCCAGACCCCGAGGCA 1850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCAGCTACTCCGTGCTCACGTGCACC 1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAG 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         324 Trececahrerecedaedechaagrreadageerrraredeerreceeerrigraa 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          were removed following manual inspection of assemblies (Close, Roose, Wanamaker). Sequences that survived all removal steps were submitted to GenBank."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84 GGCTCGGATGAAGAGGCAAACCTCTTGGCCATGCAATTAACCAGTGCCTCAGTCTTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APARTCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGGAATCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1971 TICTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1611 AAGAGAGGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCCAGATGACCCCGGACCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24 AAAAAAAAAAAAACAAAATGGGTTCAACCAGTTCAGAAACTCAAATAAGTCCAGCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144 ATGGTTCTCAAATCAGCCATTGAGCTTGATCTTTTAGAGGTCATCGCTAAAGCTGGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  canarcerecinearcenarariececcincieeceaeciaricaerccinaariecrer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384 TTCCTCACTAAAAATGAAGATGGTGTTACACTTTCCGATCTTTGTCATGAACCAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 931;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 484.8; DB 9;
Pred. No. 2.4e-128;
0; Mismatches 257;
  clone="UCRCP01_037_T7_E09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16.0%;
llarity 71.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 650; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
CDNA library - URCROIN .

CDNA library - URCROIN .

Anote="Vector: Lambda Uni-ZAP XR, excised phagemid; Site_1: ExoRI; Site_2: Xhol; Twelve seedlings were transplanted from cones to 4 inch pots of sand mix, then grown in greenhouses (Darsow, Becker lab). Citrus contaminated soil from the UC Riverside Citrus Research Contaminated soil from the UC Riverside (Dirus Research Contaminated soil from the and 4 days after inoculation the old root ball 24 hr and 4 days after inoculation (Federici). Total RNA was extracted using Concert Plant RNA Reagent (Invitrogen) followed by RNessy (Qiagen), an equal amount of RNA was pooled from each of the two collection times, poly(A) RNA was purified using Oligotex (Qiagen), a CDNA library was made using a CDNA synthesis kit (Stratagene), then O.45 million primary lambda cDNA clones were in vivo excised to give a population of pBluescript SK(-) phagemids (Fenton, Close lab). Phagemids were plated, plasmid DNA purified, cDNA clones archived, and DNA sequences determined bi-directionally using an AB13730 at the University of California Riverside Institute of Integrative Genome Biology Genomics Core Institute of Integrative Genome Biology Genomics Core Institute of Integrative Genome Biology Genomics Core Institute of Action Processed by Wanamaker (Close lab) using the HarvBST pipeline (http://harvest.ucr.edu) to remove vector and cloning oligo sequences and various conteminants, and to trim to a high quality region. Sequences that retained a phred 17 region of at least 100 bases were assembled, then processed by were removed following manual inspection of assembles were sesembled. Then convey (Close, Roose, Wanamaker). Sequences that survived all removal steps were submitted to GenBank."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCC 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAA 2034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCA 2094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGAAGAACAT 2214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2275 TCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGA-CCGCCCCAAC 2333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGACCTCCCCGATGGCAAGGTCGAGCGCTCTACGGCTTAGCGCCCGGTGTGCAAGTTCT 1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            543 traacargatrarcrecaagrarccarcgatraaaggcarraactrrearregecarg 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rcerectrolardariecterrirciedeceaectaricaerciraariectriae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAATCTCCCCGACGCAAAGTTGAGAGGCTTTATGGCCTTTGCCCCCGTTTGTAAATTCC 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             843 TCACTAAAAATGAAGATGGTGTTACACTTTCCGATCTTTGTCTCATGAACCAAGACAAGG 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2334 GGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCA
'clone_lib="Swingle citrumelo nematode-challenged root
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Trcrcargaagagcragracracrraaagargcagracrraaaggragragragragragrarra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCCGACCCGCGATTCAACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  723 ACAAGGCCTATGGGATGAATGCATTCGATTACCACGGCAAAGATCTAAGATTCAACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           663 TTTTCAACAATGGAATGTCTTCTCTACCATTACCATGAAGAAAATTCTTGAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2215 ACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGGCCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 480.6; DB 9; Length 964;
Pred. No. 3.9e-127;
0; Mismatches 239; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15.9%;
72.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 635; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
```

셤

8 8 8 8 8 8 8

8 B 8

원

ઠે

```
UCRCF01 005 E01 T3 Swingle citrumelo nematode-challenged root cDNA library - UCRCP01 Citrus x paradisi x Poncirus trifoliata cDNA clone UCRCP01 005_T3_E01, mRNA sequence.

CX663706
CX663706.1 GI:57921620
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Byermatophyta; Magnoliophyta; eudicotyledons;
cosids; eurosids II; Sapindales; Rutaceae; Citrus x Poncirus.
I (Bases I to 917).
Penton,R.D., Wanamaker,S., Choi,Y.G and Kingan,T.
Penton,R.D., Wanamaker,S., Choi,Y.G and Kingan,T.
Developmen fo EST Resources and New Genetic Markers for California
Citrus - Swingle citrumelo nematode-challenged roots - UCRCPOI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_bost="E_coli TJC121"
/lab_bost="E_coli TJC121"
/clone lib="Swingle citrumelo nematode-challenged root
cDNA library - UCRCP01"
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
Site_1: EcoR1; Site_2: Xho1; Twelve seedlings were
transplanted from cones to 4 inch pots of sand mix, then
grown in greenhouses (Darsow, Becker lab). Citrus
nematodes (Tylenchulus semipenitrans) were extracted from
contaminated soil from the UC Riverside Citrus Research
                                                                                                                                                    2513
                                                                                                                                                                                                                                                     2573
                                                                                                                                                                                                                                                                                                                                                     2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2634 TCGAGGCAITTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCG 2693
                                                                                                                                                                                      363 ACTGCGTGAAATTCTTGAAGAACTGCTATGAAGCACTCCCAGTAAATGGGAAAGTCATTG 304
                                                                                                                                                                                                                                                                                                      244
                                                                                                                                                                                                                                                                                                                                                                                                       184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     183 icacadcatrigecradecrecresatriccaaderriccaadricreadecrescritira 124
483 TIAITCAGGAIGCICCAGCITITICCIGGIGICGAGCAIGITGGGGGGAGACAIGITIGITA 424
                                                                              423 GTGTTCCAAAGGGAGATGCCATTTTATCAAGTGGATATGTCATGATTGGAGTGATGAGG 364
                                                                                                                                                                                                                                                     2514 TTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCC
                                                                                                                                                                                                                                                                                                                                                   2574 ACATCGACTGCATCATGTTGGCCCACAACCCAGGCGGAAAGAGAAGAAGAACACAGAAGGAGT
                                                                                                                                                    2454 ATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCG
                                                                                                                                                                                                                                                                                                    303 triecretarictricicaetracciceetraectricarecarectricarectricarectricarectric
                                                                                                                                                                                                                                                                                                                                                                                                       2394 GCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'organism="Citrus x paradisi x Poncirus trifoliata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2694 GCACTCACGTCATGGAGTTCCTGAAGACCGCTTGA 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        123 ATACTTACATTATGGAATTTCTCAAGAGTGCTTGA 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Timothy J. Close
Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db xref="taxon:309804"
/clone="UCRCP01_005_T3_E01"
/tissue_type="root"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: 909-787-3318
Fax: 909-787-4437
Email: timothy.close@ucr.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/cultivar="Swingle"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seq primer: T3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CX663706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                        원
                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                        셤
                                                                                                                                                         8
                                                      ð
```

Growing roots were collected by clipping them away from the old root ball 24 hr and 4 days after inoculation (Federici). Total RNA was extracted using Concert Plant RNA Reagant (Invitroelland) and equal amount of RNA was pollowed by RNeasy (Giagen), an equal amount of RNA was pooled from each of the two collection times, poly(A) RNA was purified using Oilsotex (Giagen), a cDNA library was made using a cDNA synthesis kit (Stratagene), then 0.45 million primary lambda cDNA clones were in vivo excised to give a population of pBluescript SK(-) phagemids (Fenton, Close lab). Phagemids were plated, plasmid DNA purified, cDNA clones archived, and DNA sequences determined bi-directionally using an AB1373 at the University of California Riverside Institute of Integrative Genome Biology Genomics Core Instrumentation Facility, (Choi, Kingan). Chromatogram files were downloaded by FTP by Close, then processed by Wanamaker (Close lab) using the HarvEST pipeline (http://harvest.ucr.edu) to remove vector and cloning oligo sequences and various contaminants, and to trim to a high quality region. Sequences that retained a phred 17 region of at least 100 bases were assembled, then chimeras were removed following manual inspection of assemblies (Close, Roose, Wanamaker). Sequences that survived all removal steps were submitted to GenBank." 1659 2019 2079 1719 1779 1839 1899 1900 TCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAAGCGC 1959 258 318 378 78 TTAATTGCTCTTTGCGCAATCTCCCCGACGACGCAAAGTTGAGAGGCTTTATGGCCTTGCCC GGAAGAGAGAGAGAGAGGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGA 19 GGAAAAGAGGGAGAAAAAAAAAAGGACAAAATGGGTTCAACCCAGTTCAGAAACTCAAATAA 1660 CCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCT GTCCAGCCCAAGGCTCGGATGAAGAGGCAAACCTCTTGGCCATGCAATTAACCAGTGCCT CCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCA CAGTCTTGCCTATGGTTCTCAAATCAGCCATTGAGCTTGATCTTTTAGAGATCATAGCTA AAGCTGGGCCCGATGCTTTCATGTCTCCAAAAGACATAGCTTCTCAGGTGCCCACAAAGA ACCCGAGGCACCGGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGC 259 ACCCAGATGCCCATATCGTGCTTGATCGTATATTGCGCCCTTCTGGCGAGCTATTCAGTCC CGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCGACTTGA cedirrignakaricerenekakarakandarakarakarakarrakarenereka TGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAG Gaps <u>ب</u> Length 917; Indels 15.8%; Score 479.8; DB 9; llarity 71.7%; Pred. No. 6.6e-127; Conservative 0; Mismatches 252; Query Match Best Local Similarity Matches 642; Conserv 199 1840 319 79 1720 1780 2020 1600 139 1960 379

ORIGIN

8 셤 ò g δ 셤 ઠે 유 ò 셤 δ g ઠે g ઠે 셤 ઠે 셤 ò

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Bukaryota; Viridiplantae; Streptophyta; Eukaryota; Viridiplantae; Streptophyta; Egermatophyta; Magnollophyta; eudicotyledons; rosids; eurosids I; Malpighiales; Salicaceae; Salicacea; Populus.

E 1 (bases 1 to 911)

Kirkpetrick, R., Liu, J., Ralmquist, D., Stott, J., Barber, S., Yang, G., Rirkpetrick, R., Liu, J., Palmquist, D., Stott, J., Barber, S., Yang, G., Babakaiff, R., Brown-John, W., Chand, S., Featherstone, R., Masson, A., Mayo, M., Moran, J., Olson, T., Wong, D., Ritland, C.E., Siddiqui, A., Holt, R., Jones, S., Marra, M., Ellis, B.E., Douglas, C., Ritland, K. and Bohlmann, J.

The poplar transcriptome: Analysis of expressed sequence tags from multiple CDNA libraries

L Unpublished (2004) WS01126.8R O15 PT-P-FL-A-2 Populus trichocarpa cDNA clone WS01126 O15 5', mRNA sequence. 2378 2438 Contact: Joerg Bohlmann Genome BC forest genomics program University of British Columbia Michael Smith Laboratories, 6174 University Boulevard, Rm. 237, Vancouver, British Columbia, Canada, V6T 123 619 AAATTCTTGAAAATTACAAAGGGTTTGAAGGCCTCAACTCAGTTGTCGACGTTGGTGGTG 739 frdarrigccacatgriaticaccarccicacrificcicaciercacacarcrices 799 GAGACATGTTTGTTAGTGTTCCAAAGGGAGATGCCATTTTTATCAAGTGGATATGTCATG 2260 GCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAAAAACCATCAAAGGGATCAACT 679 GAATTGGAGCCACACTTAACATGATTATCTCCAAGTATCCATCGATTAAAGGCATTAACT TCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAG GCGACATGTTCGTCAGCGTTCCAAAGGGAATGCCATTTTCATGAAGTGGATATGCCATG 2439 ACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCC 2493 ATTGGAGTGATGACACTGCGTGAAATTCTTGAAGAACTGCTATGAAGCACTCCC 913 Populus trichocarpa (Populus balsamifera subsp. trichocarpa) /mol type="mRNA" /cultivar="383-2499 (Nisqually-1)" /db_xref="taxon:3694" /clone="WS01126_015" organism="Populus trichocarpa" 12 Fax: 1-604-822-2114
Email: bohlmann@ms1.ubc.ca
Plate: WS01126 row: 0 column:
High quality sequence stop: 943. DT497587.1 GI:73894849 Populus trichocarpa 2320 ' 859 2379 source VERSION KEYWORDS SOURCE ORGANISM DEFINITION REFERENCE AUTHORS JOURNAL ACCESSION DT497587 FEATURES 셤 g 셤 셤 ð ઠ ð 8

2259

2200 AGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGAGACCGTGGTCGATGTCGGAGGCG

2139

GCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACC GTGGCATTCCATTTAACAAGGCCTATGGGATGAATGCATTCGATTACCACGCGAAAGATC

2080

499

요

558

2199

2140 CGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGA 559 TAAGATTCAACAAGATTTTCAACAATGGAATGTCTTCTCGATTGCATTACCATGAAGA

propagation."

```
CATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC 2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2246
                                                                                                                                                                                                                                  CICCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGC 1886
                                                                                                                                                                                                                                                                                   AGCTACTCCGTGCTCACGTGCACCTCCGCGATGCCAAGGTCGAGCGGCTC 1946
                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2366 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 2425
                                                                                                                                                                                                                                                                                                                                       TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2006
                                                                                                                                                                                                                                                                                                                                                                                           GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT 2066
                                                                                                                                                                                                                                                                                                                                                                                                                     518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   818
                                                                                                                         creeceaececricerecrecearegrecranasaecececeareaareacerecre 1766
                                                                                                                                                                               GAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGGCACAG 1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    819 GAGCATGTTGGTGGGGGACATGTTTGTTAGTGTGCCCAAAGCAGATGCCGTTTTCATGAAG 878
                                                                        1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99 GAAACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGGCACACCTCTTGCCATGCAA 158
                                                                                                                                                                                             219 GAAATCAFGGCTAAAGCTGGCCCTGGTGCTTTCTTGTCCACATCTGAGATAGCTTCTAA 278
                                                                                                                                                                                                                                                   CTCCCTACCAAAAACCCTGATGCGCCTGTCATGTTAGACCGTATCTTGCGCCTTCTGGCT 338
                                                                                                                                                                                                                                                                                                        GATGTCGGAGGCGCCTCGGCCCTCAGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                         459 CCTCTCTGTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 759 AAGGGCATTAACTTTGATCTGCCCCACGTTTGAGGATGCCCCATCTTATCCCGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2187 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                             Gaps
                                                 1;
                    Length 911;
                   Query Match 15.6%; Score 473; DB 10; Length 9 Best Local Similarity 74.7%; Pred. No. 6.2e-125; Matches 607; Conservative 0; Mismatches 205; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGATATGCCATGACTGGAGTGACGACCATTGC 2458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              879 TGGATATGCCATGATTGGAGCGACGCACACTGC 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2426
                                                                                                                                                         159
                                                                                                                                                                                                                                                                                                                 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2127
                                                                                                                              1707
                                                                                                                                                                                  1767
                                                                                                                                                                                                                                    1827
                                                                                                                                                                                                                                                             279
                                                                                                                                                                                                                                                                                        1887
                                                                                                                                                                                                                                                                                                                                           1947
                                                                                                                                                                                                                                                                                                                                                                    399
                                                                                                                                                                                                                                                                                                                                                                                               2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               639
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                        6 6 6 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                         g &
                                                                                                                                                                                                                                                                                                                                                              8 & 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            성 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                              8 8
                                                                                                                                                                               6 6 6 6
                                                                              ઠે
```

Search completed: November 1, 2006, 07:01:24 Job time: 9848.88 secs

```
7, App
7, App
Appl
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                             (without alignments)
10067.438 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appl
Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                1 cacctgttcagtttgattcc......acttcgaacaaaaaaaaa 3030
                                                                               ; Search time 563.148 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Celerra_SIDS3/ptodata/2/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                               /EMC_Celerra_SIDS3/ptodata/2/ina/1_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/5_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/6A_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/6B_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PGTUS_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PGTUS_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PPCTUS_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PPCCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence Sequence Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-598-401C-113

US-09-598-401C-60

US-09-615-192A-107

US-09-169-789-112

US-09-599-12

US-09-599-12

US-09-5947-027-5

US-09-947-027-5

US-09-947-027-5

US-09-971-823B-3

US-09-971-823B-17

US-09-971-823B-17

US-09-971-823B-17

US-09-971-823B-17

US-09-971-823B-17

US-09-971-823B-17

US-09-971-823B-17

US-09-971-823B-13

US-09-500-569-13

US-09-971-823B-13

US-09-971-823B-13

US-09-971-823B-13

US-09-971-823B-13

US-09-971-823B-13

US-09-971-823B-13

US-09-971-823B-13

US-09-971-823B-13

US-09-971-823B-13
                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                 1403666 segs, 935554401 residues
                                                                                                                               US-10-702-319A-113_COPY_41_3070
3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                    nucleic search, using sw model
                                                                               October 31, 2006, 23:41:44
                                                                                                                                                                                                      Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                     Patents NA:*
                                                                                                                                                                                                                                                                                       seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3070
2096
1630
1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
661
1503
11503
11368
11370
11370
11380
11314
11314
11507
11430
                                                                                                                                                                                         IDENTITY NUC
           Copyright
                                                                                                                                                                                                                                                                                                                                                                                     Issued
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21.1
20.8
20.8
20.4
19.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                   Perfect score:
                                                                                                                                                                                                                                                                                       Minimum DB
Maximum DB
                                                     OM nucleic
                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Result
```

Sequence 24, Appl Sequence 106, App Sequence 3, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli Sequence 12, Appli Sequence 13, Appli Sequence 13, Appli Sequence 13, Appli Sequence 11, Appli Sequence 127, Appli Sequence 15, Appli Sequence 15, Appli Sequence 15, Appli Sequence 15, Appli Sequence 15, Appli Sequence 15, Appli	the iion , 591	100.0%; Score 3030; DB 3; Length 3070; imilarity 100.0%; Pred. No. 0; Conservative 0; Mismatches 0; Indels 0; Gaps 0 CACCTGTTGATTCCTTGATGATGATGATGATGATGATGATGATGATGATGATGA
3 US-09-169-789-24 3 US-09-615-192A-106 3 US-09-615-192A-106 3 US-09-15-15-15 3 US-08-186-833-3 3 US-09-500-569-11 3 US-09-500-569-1 3 US-09-501-869-1 3 US-09-501-869-19 3 US-09-501-869-19 3 US-09-501-869-19 3 US-09-501-869-19 3 US-09-615-192A-51 3 US-09-615-192A-11 3 US-09-615-192A-11 3 US-09-615-192A-11 3 US-09-615-192A-127 3 US-09-615-192A-127 3 US-09-615-192A-127 3 US-09-615-192A-127 3 US-09-615-192A-127 3 US-09-615-192A-127 3 US-09-615-192A-127 3 US-09-615-192A-127 3 US-09-615-192A-127 3 US-09-615-192A-192 3 US-09-615-192A-193 3 US-09-615-192A-193 3 US-09-615-192A-193 3 US-09-615-192A-193	ALIGNMENTS 09598401C tions and Methods for ation of Gene Express US/09/598,401C 6-20 6-20 7.NO. 6596925 60/146 T/NZ00/00018 S. No. 6596925 09/276 5 8 Version 4.0	0%; Score 3030; DB 3 0%; Pred. No. 0; 0; Mismatches 0 TTCCCTTGAGATGACCTACAGT
12.9 12.9 40.7 11.3 11.3 11.3 11.3 11.3 11.3 11.3 11.95 10.5 10.5 10.5 10.6 9.9 9.9 9.9 9.9 9.9 9.9 9.6 9.9 9.6 9.6	ati J. J. OOO. NUMB 1199 UMB UMB UMB UMB	100.0%; Local Similarity 100.0%; les 3030; Conservative CACCTGTTCAGTTTCATTC
254 255 264 276 276 276 276 276 276 276 276	RESULT 1 US-09-598-401C-113 Sequence 113, Applicat Sequence 113, Applicat Baten No. 6595025 GENERAL INFORMATION: APPLICANT: Badleton, APPLICANT: Badleton, APPLICANT: Badleton, TITLE OF INVENTION: FILE REPERENCE: 11000 CURRENT APPLICATION NUP PRIOR FILING DATE: 15 PRIOR PRIOR PRIOR DATE: 15 PRIOR FILING DATE: 15 PRIOR FILING DATE: 15 PRIOR FILING DATE: 15 PRIOR PRIOR PRIOR PRIOR DATE: 15 PRIO	Query Match Best Local Sin Matches 3030; Qy 1 C

GATAATAGATTCACCAGAGGATAAAAAGGTAGGGAGATAAGGGATCTCCCCGTCTGATG

41 61 101 121 161 181 221

> g 8 g ઠે

> > Appli Appli Appli

Sequence 3 Sequence 5 Sequence 5 Sequence 1

Sequence Sequence Sequence

ઠે

180

240

GTCGTTATGCATTGCATGATCCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGA

ccrcegeraderreaaarraagecaaaagrreeccerreaarrreacageaaaagacacc 220

CCTCGGGTAGGTTGAAAATAAGGCAAAAGTTCGCCGTTGAATTTTGACAGCAAAAGACACC

m

1038

Gaps

4;

100

1098

160

1158

1218

1278

280

1338

400

340

1394

1454

520

460

1514

580

1574

640

1694

1754

820

760

1634

700

1814

880

1874

940

1934 1000 1994

```
GICTCCATCGCCGCACTCGATGATGAACCCAGGACAAAATCCTCATGGAAAAGCTGGTAT
                                                                                                                                                                                                         1159 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                            1339 AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                             TTCGCCATGCAGCTGCCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1815 ATCGCGGCACCACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGGCTGCTGGCCACCTACTCCCGTGCTCCACGTGCACCCTCCGCGACCTCCCCCGATGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGCGGG
                                                                                                                    101 CGAATTTTCTCTTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAGGCTGATTA
                                                                                                                                                  GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                  GTATGATCTTGGGGTTGTTGGTGGTGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                           221 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                       1219 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                     1279 AACTCCGTATTTCTCTCTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                341 AACTCCGTATTTCTCTCACATCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1455 ACATATTGGTGTGAGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             581 TATCGAACCTCCACCACCACCACCCCCCACCCATTATCCATTTATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1635 TCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCGCGGCCCAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGTCGTCGACCGGATCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCTCCATCGCCGCACTCAACTTGAACCAGGACAAAATCCTCATGGAAGCTGGTAT
                                                                                       CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1515 TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                           crgagccarrraarrcgagagcacarcgcccaaaarrarrcrrcrrgcrgccaraacrgr
                               CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
 Indels
 11,
 Mismatches
 ;
0
   Conservative
   2041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1935
                                                                                        1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1001
                               979
                                                            41
                                                                                                                                                    1099
                                                                                                                                                                                161
                                                                                                                                                                                                                                                                                                                                                                                                                          401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1001
   Matches
                                                                                                                                                                      g
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                               ઠે
                                                     셤
                                                                                                              g
                                                                                                                                         8
                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                        ઠે
                                                                                                                                                                  2640
                                                                                                                                                                                                                                                         2740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2940
                                                                                                        2580
                                                                                                                                    2620
                                                                                                                                                                                               2680
                                                                                                                                                                                                                           2700
                                                                                                                                                                                                                                                                                       2760
                                                                                                                                                                                                                                                                                                                   2800
                                                                                                                                                                                                                                                                                                                                                2820
                                                                                                                                                                                                                                                                                                                                                                              2860
                                                                                                                                                                                                                                                                                                                                                                                                            2880
                                                                                                                                                                                                                                                                                                                                                                                                                                         2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3040
CTGCATCATGTTGGCCCACACCCAGGCGGGAAAGAGAGACACACAGAAGGAGTTCGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGTGCGCAAGTGGAAGTTACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TIGITGITITIATGICTATAAAGITTTGAGICTICCGCATACTGATTTCACAGAATGIGIA
                                              GAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGA
                                                                          GAAGTICCICAAGAACTGCIACGATGCGCTICCCAACAATGGAAAGGTGATCGTTGCAGA
                                                                                                      GTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGA
                                                                                                                         GTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGA
                                                                                                                                                                  CTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGAGAGGACACACAGAAGGAGTTCGAGGC
                                                                                                                                                                                                                             ATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCA
                                                                                                                                                                                                                                             ATTGGCCAAAGGGGCCGGATTTCAGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCA
                                                                                                                                                                                                                                                                                        CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                        CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                  GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                   GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                            TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rigiritriaigicraraaagririgagicricigcaracrgarricacagaargrgra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACGAAACGCCTATATGCATGTGCCTGAATGGAAATTGTGATATATTCTGTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 3; Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: PETERA, Tanjan
APPLICANT: Eagleton, Clare
APPLICANT: Eagleton, Clare
APPLICANT: Eagleton, Clare
APPLICANT: Rice, Stephen J.
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Compositions of Gene Expression
FILE REFERENCE: 11000.1036c2
CURRENT FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: US. No. 6596925 60/146,591
PRIOR APPLICATION NUMBER: PCT/NZ00/00018
PRIOR FILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-03-25
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09/276,599
PRIOR PILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 120
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 60
LENGTH: 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAGTAAATCACTTCGAACAAAAAAAAA 3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rcagraaarcacrrcgaacaaaaaaaa 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 2020.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 60, Application US/09598401C Patent No. 6596925 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66.7%;
99.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -09-598-401C-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: 1
                                                                          2501
                                                                                                                                    2561
                                                                                                                                                                                                                          2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3001
                  2441
                                              2461
                                                                                                        2521
                                                                                                                                                                  2581
                                                                                                                                                                                            2621
                                                                                                                                                                                                                                                         2681
                                                                                                                                                                                                                                                                                       2701
                                                                                                                                                                                                                                                                                                                   2741
                                                                                                                                                                                                                                                                                                                                                2761
                                                                                                                                                                                                                                                                                                                                                                              2801
                                                                                                                                                                                                                                                                                                                                                                                                            2821
                                                                                                                                                                                                                                                                                                                                                                                                                                        2861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3041
                 유
                                                                       g
                                                                                                                            g
                                                                                                                                                                                         a
                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                              ò
                                                                                                     ઠે
                                                                                                                                                               δ
```

```
US-09-615-192A-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                      1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                   1561
                                                                                                                                                                                                         TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                   요
                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                         1420
                                                                                                                                                                                                                                2414
                                                                                                                                                                                                                                                                             2474
                                                                                                                                                                                                                                                                                         2654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGAAACGAAACGGCGTAT 2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGATGTGCCTGAATGGAAATTGTGATATTCTGTCTTCTTTTCAGTAAATCACTT 3014
                                                                                                                                                                                   2354
                                                                                                                                                                                                                                                                                                                                    1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATTCATGGATTTTGAAAGGTC 2774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GIGAAGGAGCCCTITICICACAGIIGGCTICGGCAIACCAAGIICTICICAIAAAAGGAA 1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTATGT 1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT 2954
2114
             TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACC 1180
                                                                                                                                                                                                                                                     rrccregrercaaccacercesaescarerrerresrescerrecaaaceaagareca 1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGGAAGTTACAAGATTTGTTTTTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2021 ATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTT
                                                         GCGTTCGAGTATCATGGCACCGGCACTCGAACAAGATCTTTAACCGGGGAATGTCT
                                                                                                       GATCACTCCACCATTACTATGAAGAAGATACTIGGAAACATACAAGGGCTTCGAGGGCCTC
                                                                                                                                                    GAGACCGTGGTGTCTCGGAGGGGGCCACTGGGGCCGTCAGCATCGTTGCCAAA
                                                                                                                                                                                                  TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCC
                                                                                                                                                                                                                                                                            TTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                  TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                  CCCACAACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                               CCCACAACCCAGGGGGAAAGAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                         GATCACTCCACCATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTC
                                                                                                                                       GAGACCGTGGTCGATGTCGGAGGCGGCACTGGGCCCGTGCTCAGCATGATCGTTGCCAAA
                                                                                                                                                                                   TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCC
                                                                                                                                                                                                                                TTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAAGTGCCA
                                                                                                                                                                                                                                                                                                                        ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                     TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACC
                                             GCGTTCGAGTATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAACAAAAAAAAA 3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAACAAAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                             1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3015
                                                                                         2175
                                                                                                                                       2235
                                                                                                                                                                                    2295
                                                                                                                                                                                                                                                                              2415
                                                                                                                                                                                                                                                                                                    1481
                                                                                                                                                                                                                                                                                                                           2475
                                                                                                                                                                                                                                                                                                                                                                       2535
                                                                                                                                                                                                                                                                                                                                                                                                                  2595
                                                                                                                                                                                                                                                                                                                                                                                                                                         1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2081
                      1121
                                                                    1181
                                                                                                                1241
                                                                                                                                                                                                           1361
                                                                                                                                                                                                                                 2355
                                                                                                                                                                                                                                                      1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1721
                                              2115
                                                                                                                                                              1301
                                                                                                                                                                                                                                                                                                                                                                   8 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                            8 6 B
                                                                                                                                    ठ व ठ
                                                                                                                                                                                                   8 8 8 8
                                                                                                                                                                                                                                                                                              8 % 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
               용
```

; Sequence 107, Application US/09615192A

RESULT 3 US-09-615-192A-107

2040 2100 2160 2220 2280 1740 1800 1860 1920 1980 1620 1680 1, 300 360 480 540 099 recedandecia a de la contra dela contra de la contra dela contra de la contra del la contra de la contra del la co 600 120 180 240 9 61 AGGAGAGATGGGTTCGACCGGATCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG 301 TCGACCGGATCTTCCGGCTGCTGGCCACTACTCCGTGCTCACGTGCACCCTCCGCGACC 1981 AGAACGAGGACTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA AGNACGAGGACGGGGTCTCCATCGCCGCACTCGACTTGATGAACCAGGACAAAATCCTCA GCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGGGGGCACTGGGGCCGTGCTAGGA 1621 AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG 1681 ACGAGGCGAACCTCTTCGCCATGCAGCTCGCAGCGCCTCCGTGCTCCTAA AGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCCGTTCC TCTCCACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGC 241 TCTCCCCGGGGGAAGTCGCGGCCCAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGC TCGACCGGATCTTCCGGCTGCTGCCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACC TCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCA TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTTTA 2161 ACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG Gaps DB 3; Length 1630; 1; GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content
FILE REFERENCE: 11000.1003.4U
CURRENT APPLICATION NUMBER: US/09/615,192A
CURRENT FILING DATE: 2000-07-12
PRIOR FILING DATE: 1997-11-21
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1998-10-09
NUMBER OF SEQ ID NOS: 405
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 107
LENGTH: 1630 Indels 14; Query Match
Best Local Similarity 99.0%; Pred. No. 0;
Matches 1449; Conservative 0; Mismatches ORGANISM: Eucalyptus grandis 2221 601 유 8

1680

9

Gaps

120

1800

240

180

1860

300

1920

1980

420

```
CGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAG
                                                                                                                                        1621 AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGGACCCAAGTCTCGGACG
                                                                                                                                                                                  ACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAA
                                                                                                                                                                                                                                AGGCCCCCATCCAGATCCACCTCCTCCAGATCATGCCCAAGGACGGGCCGGGCGTTCC
                                                                                                                                                                                                                                                                                TCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGC
                                                                                                                                                                                                                                                                                                                                   TCTCCCCGGGGGAAGTCGCGGCCCAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGC
                                                                                                                                                                                                                                                                                                                                                                   TCGACCGGATCTTCCGGCTGCTGCCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                 TCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                               TCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGGCACTGGGGCCCTGCTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGGGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caaaccacarcartricarcaacaararccarcaacacacacacaaccarracc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ceaagriccicaagaacrecracgarececricceaacaaregaaaggrearegrees
                                                                                                                                                                                                                                                                                                                                                                                        resacessarentecssersecraseraeraeraeraeraeraeareareareereereeree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAACGAGGACGGGTCTCCCATCGCCGCACTCGACTTGATGAACCAGGACAAAATCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCEGEGAATETCTEATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG
                                                                                              1;
                                                                     Length 1630;
                                                                                              Indels
                                                                        .,
()
                                                                                             14;
                                                                        BB
                                                                     Score 1429.6;
Pred. No. 0;
0; Mismatches
                                                                                             ,
0
                                                                     Query Match 47.2%;
Best Local Similarity 99.0%;
Matches 1449; Conservative
                                  grandis
                      TYPE: DNA
CORGANISM: Eucalyptus
US-09-169-789-107
SEQ ID NO 107
LENGTH: 1630
                                                                                                                                                                                                                     1681
                                                                                                                                                                                                                                                                   1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2460
                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                    1801
                                                                                                                                                                                                                                                                                                                                                                   1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2340
                                                                                                                                                                                                                                                                                                                                                                                                                   1921
                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2161
                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                         g
                                                                                                                                                                                        ద
                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                     원
장
                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                    ò
                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                    원
장
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                     2579
                                                                                                                                                                                                                                                                     2639
                                                                                                                                                                                                                                                                                            1080
                                                                                                                                                                                                                                                                                                                    2699
                                                                                                                                                                                                                                                                                                                                            1140
                                                                                                                                                                                                                                                                                                                                                                                                                   2819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2939
                                                                        2399
                                                                                                                     2459
                                                                                                                                                                     2519
                                                                                                                                                                                                                                             1020
                                                                                                                                                                                                                                                                                                                                                                   2759
                                                                                                                                                                                                                                                                                                                                                                                           1200
                                                                                                                                                                                                                                                                                                                                                                                                                                         1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1440
                                                                                             840
                                                                                                                                             900
                                                                                                                                                                                             960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATTGTTGTTGTTGCAG
                                                                                                                                                                                                                                  AGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                                   ACTGCATCATGTTGGCCCACAACCCAGGGGAAAGAAGAGGAGACACAGAAGGAGTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                 TITGITTTTTTTATGITTTAAAGITTTTGAGTCTTCTGGATACTGATTTCACAGAAIGTGT
 GCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCCACTGGGGCCGTGCTCAGCA
                                                                                                                      CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG
                                                                                                                                   CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGACTGACGACCATTGCG
                                                                                                                                                                     CGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAG
                                                                                                                                                                                                                      AGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                    CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                    TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGTGGCGCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTGTTGTTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for the
Lignin Content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Bloksberg, Leonard N.
APPLICANT: Bloksberg, Leonard N.
TITLE OF INVENTION: Materials and Methods for TITLE OF INVENTION: Modification of Plant Light REFERENCE: 11000.1003c2
CURRENT APPLICATION NUMBER: US/09/169,789
CURRENT FILING DATE: 1998-10-09
BARLIER APPLICATION NUMBER: US 08/975,316
EARLIER APPLICATION NUMBER: US 08/713,000
EARLIER PILING DATE: 1997-11-21
BARLIER PILING DATE: 1996-09-11
NUMBER OF SEQ ID NOS: 185
SOFTWARE: FASELEG for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCAGTAAATCACTTCGAACAAAA 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 107, Application US/09169789 Patent No. 6653528 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-169-789-107
                                              721
                        2281
                                                                        2340
                                                                                                                                                                     2460
                                                                                                                                                                                                                     2520
                                                                                                                                                                                                                                                                     2580
                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                    2640
                                                                                                                                                                                                                                                                                                                                                                   2700
                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                   2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3000
 661
                                                                                             781
                                                                                                                     2400
                                                                                                                                              841
                                                                                                                                                                                             901
                                                                                                                                                                                                                                             961
                                                                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                                                                                                                                                                                         1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1441
                                                                                                                                                                                                                                                                                                                                                                                    සු දු
                        ò
                                             셤
                                                                                        ద
                                                                                                                     ઠે
                                                                                                                                       g
                                                                                                                                                             ઠે
                                                                                                                                                                                       셤
                                                                                                                                                                                                                8 8 8
                                                                                                                                                                                                                                                                                    8 8
                                                                                                                                                                                                                                                                                                                                   8 B
                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ર્જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                               ઠે
```

2040

2100

540

2160

2220

900

2280

720

999

2339

780

2399

840

2459

2519

240

1278

300

1394

420

1454

480

```
1279 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 1338
                                                                                                                                                         181 AAGGCGCCAACCCAGATTGCAAAGAGACAAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                            241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                       121 grargarcrrggagrrgrrggrgcaaarrrgcaagcrgacgargccccrcagggaaarr
                                                                                                                                     1159 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                        ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACTAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                 1395 AGAGTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1455 ACATATTGGTGTGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1515 TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 TATCGAACCTCCACCACCATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1099 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21.1%; Score 638.2; DB 3; Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 12, Application US/09598401C

Sequence 12, Application US/09598401C

Patent No. 659625

GENERAL INFORMATION:

APPLICANT: Perera, J. Ranjan

APPLICANT: Ragleton, Clare

APPLICANT: Ragleton, Clare

APPLICANT: Ragleton, Care

TITLE OF INVENTION: Modification of Gene Expression

FILE OF INVENTION: Modification of Gene Expression

FILE OF INVENTION: MODIFIER: US/09/598,401C

CURRENT FILING DATE: 1000-06-20

PRIOR APPLICATION NUMBER: US. No. 6596925 60/146,591

PRIOR FILING DATE: 1999-07-30

PRIOR FILING DATE: 1999-03-25

PRIOR FILING DATE: 1999-03-25

NUMBER OF SEQ ID NOS: 120

SOFTWARE: PastSEQ for Windows Version 4.0

1 REATHLY APPLICATION NUMBER: US. No. 6596925 09/276,599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Eucalyptus grandis
1039 CGAATTTTCTCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1635 T 1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-598-401C-12
                                                                                                                                                                                                            1219
                                                                                                                                                                                                                                                                                                                                                     1339
                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                   à
                                                                                                  원
                                                                                                                                       8
                                                                                                                                                              ద
                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                  2819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT 1038
                                        1081 CATTGGCCAAAGGGCCCGGATTTCAGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC 1140
                                                                                                                                                                                                                                                  TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA 2879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                      CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                  TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                           TTCTCATAAAAGGAAACAATAAAGAAGCGACTGTATGATGATGGCGCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                              ACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCTCTGTGGTGATGTTCATGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                           TITGITGITITIATGICIATAAGITITIGAGICTICIGCATACIGATITICACAGAATGIGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTGTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 638.2; DB 3; Length 661;
Pred. No. 6e-162;
0; Mismatches 3; Indels 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Perera, J. Ranjan
APPLICANT: Rice, Stephen J.
TITLE OF INVENTION: Composition and methods for the
TITLE OF INVENTION: Composition of gene expression
FILE REPERENCE: 11000.103
CURRENT APPLICATION NUMBER: US/09/276,599
CURRENT FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 21
SOFTWARE: FastsEQ for Windows Version 3.0
SEQ ID NO 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAGTAAATCACTTCGAACAAAA 3023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1441 Trcagraaarcacrrcgaacaaa 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Sequence 12, Application US/09276599; Patent No. 6380459; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
CRGANISM:
CRGANISM:
CRGANISM:
NAME/KEY: S'UTR
LOCATION:
NAME/KEY: TATA signal
LOCATION: (1)...(543)
NAME/KEY: TATA signal
LOCATION: (537)...(543)
NAME/KEY: CAAT signal
LOCATION: (499)...(502)
US-09-276-599-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21.1%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 98.9
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 5
US-09-276-599-12
                                                    961
                                                                                                                                                                                                                              2700
                                                                                                                                                                                                                                                                                                                                                                                                                                           2880 '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3000
                                                                                       2580
                                                                                                                                                         2640
                                                                                                                                                                                                                                                                                                  2760
                                                                                                                                                                                                                                                                                                                                                                       2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         979
                                                                                                                                                                                                                                                                                                                                                                                                          1261
                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                 ብ አ
                                                                                                                                                                                                                            8 6
                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                         පු
                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                           원
장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                            ò
                                           셤
```

1574

600

1634

099

1514

319

199

Gaps

.; H

Length 1503

1946

2006

439

2066

2186

559

2246

619

619

2306

739

2365

2485

2425

859

```
CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGATCATGGCCAAGGACGGGCCGGGCGTTCCTCTCCACGGGGGAAATCGCGGGACAG 1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2546 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAACCCA 2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Acadecerreceaecedes de la consecue d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCGGGAAAGAGGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG 2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GARATCATGGCTAAAGCTGGCCCTGGTGCTTTCTTGTCCACATCTGAGATAGCTTCTCAC 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTACTCCATTCTTACCTGCTCTCTGAAAGATCTTCCTGATGGGAAGGTTGAGAGACTG 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGGCATTAACTTCGATCTGCCCCACGTCATTGAGGATGCCCCATCTTATCCCGGAGTG 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGATATGCCATGATTGGAGGGACGCCCACTGCTTAAAATTCTTGAAGAATTGCTATGAC 919
                                                                                                                                                                                                                                      1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                              CTAGCCAGTGCTTCTACCAATGATCCTCAAAAACAGCCATTGAACTCGACCTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2187 ATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2247 GATGTCGGAGGCGCCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gagdangingsresceacandinistrasistiscecaaascasaiscecinintareas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                          GAAACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGCACACCTCTTTGCCATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 creceraceaaaaceergargegeerereargrandragaeggraneergeeereeeer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              raresecrescretrifiaaarrerisaceaaaadaadadagaesererererere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTACCATGAAGAAGATTCTTGAGACCTACAAAGGCTTTGAAGGCCTCACGTCCTTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGTTGGTGGGACTGGAGCGTCGTTAACACCCATCGTCTTAAATACCCTTCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ecérreccegaaaacecaaaereararacrierreagicearrecrerecerecereac
NAME/KEY: misc_feature
OTHER INFORMATION: AldOMT; GenBank accession number:
                                                                                                                   Score 631; DB 3; I
Pred. No. 7.9e-160;
0; Mismatches 275;
                                                                                                                Query Match
Best Local Similarity 74.5%;
Matches 807; Conservative (
            ; NAME/KEY: mi
; OTHER INFORM
US-09-947-027-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2426
                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                   1707
                                                                                                                                                                                                                                                                                                                                                                                                             140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       જે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 5, Application US/09947027

Sequence 5, Application US/09947027

Patent No. 6855864

GENERAL INFORMATION:

APPLICANT: Chiang, Vincent Lee C.

TITLE OF INVENTION: METHODS FOR SIMULTANEOUS CONTROL OF LIGNIN CONTENT AND COMPOSITIC

TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS

TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS

FILE REFERENCE: 066040-91947,027

CURRENT APPLICATION NUMBER: US/09/947,027

CURRENT FILING DATE: 2001-09-05

PRIOR PILING DATE: 2000-09-05

NUMBER OF SEQ ID NOS: 14

SOFTWARE: Patentin version 3.0

SEQ ID NO 5

LENGTH: 1503

TYPE: DATE: DATE: CONTENT OF CON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 1338
                                                                                                                                                                                                        1098
                                                                                                                                                                                                                                                                                                                           1158
                                                                                                                                                                                                                                                                                                                                                                                                                                           1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1634
                                    ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCATCACCAGATCGGCCAGTAAGGGTAATTATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                           CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                        CGAATTTTCTCTTTTAGGTAAGTAACCAATGAGGCGATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                            CGAATTTTTCTCTTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                           GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                          GTATGATCTTGGGGTTGTTGGGGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGGCGCCAACCCAGATTGCTAAAGAGCACAAAGAGCACCACATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATATTGGTGTGTGCGATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                    Gaps
                                    4,
                                 Indels
                                 3,
   Pred. No. 6e-162;
0; Mismatches
98.98;
Best Local Similarity 98.9
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T 1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 7
US-09-947-027-5
                                                                                                                                              ч
                                                                                                                                                                                                        1039
                                                                                                                                                                                                                                                                                                                           1099
                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                           1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1635
                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       199
                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                           셤
                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

1886

1946

2006

439

```
GOCTICCAAGICAIGIGCIGCGCTTICGGCACTCACGTCAIGGAGTTCCTGAAGACCGCT 2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2485
                                                                                                                                                                                                                                                                                                                                                                                  GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2126
GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1706
                                                                                                                                                                                                                                       320 AGCTACTCCATTCTTACCTGCTCTCTGAAAGATCTTCCTGATGGGAAGGTTGAGAGACTG 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAAGGGGCCGGATTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2187 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2247 GATGTCGGAGGCGGCACTGGGCGCGTGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2366 AAGCACGICGGAGGGGACAIGIICGICAGGGIICCAAAGGGAAGAIGCCAITITCAIGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       800 GAGCATGTTGGTGGCGACATGTTGTTAGTGTGCCCAAAGCAGATGCCGTTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2486 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2546 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGATCATGTTGGCCCACACGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                      2127 CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      200 gazarcargecraagereeceregreerrierierekarereagaragerrereae
                                                                                                                                                                                  260 CTCCCTACCAAAAACCCTGATGCGCCTGTCATGTTAGACCGTATCCTGCGCCTCCTGGCT
                                                                                                                                                                                                                    1887 AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCGATGGCAAGGTCGAGCGCTC
                                                                                                                                                                                                                                                                         1947 TACGGCTTAGCGCCGGTCTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                        CTGGCGAGCGCCTCCGTGCTCCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                                         GAGATCATGGCCCAAGGACGGGCCGGGCGCGTTCCTCCACGGGGGAAATCGCGGCACAG
                                                                                                                                                                CTCCCGACCCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                              2007 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                           500 GCAATTCTTGATGGAGGAATTCCATTAACAAGGCCTATGGGATGACTGCATTGGAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2726 TGA 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2666
                                                                                                                                                                                                                                                                                                                                                                                       2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      980
                                                                                      140
       1647
                                                           1707
                                                                                                                                                                    1827
                                80
                                                                                                               1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                             셤
                                                                                                                                                                                                                          ઠ
                                                                                                                                                                                                                                                                              ò
                            g
                                                          Ś
                                                                                  ద
                                                                                                               ò
                                                                                                                                   셤
                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ï
     GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT 2725
                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Populus Tremuloides
DEVELOPMENTAL STAGE: four year old sapling
DEVELOPMENTAL STAGE: undergoing lignification in summer
TISSUE TYPE: secondary xylem
                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 inch, 1.44 Mb storage
COMPUTER: IBM PC compatible
OPERATING SYSTEM: MS DOS 6.22
SOFTWARE: WordPerfect for Windows 5.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 20.8%; Score 629.4; DB 2; Best Local Similarity 74.4%; Pred. No. 2.1e-159; Matches 806; Conservative 0; Mismatches 276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US60/007727
FILING DATE: 30 NOV 1995
ATTORNEY/AGENT TIPORMATION:
NAME: Gemignani, Joseph A
REGISTRATION NUMBER: 19,482
REFERENCE/DOCKET NUMBER: 66040/9627
TELECOMMULICATION:
TELEPHONE: (414) 271-6560
TELEFAX: (414) 277-0656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: WordPerfect for Windows CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/715,325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IMMEDIATE SOURCE:
LIBRARY: CDNA to total mRNA
CLONE: PtOMT1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEX: 262057
INPORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1503 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear
MOLECULE TYPE: cDNA to mRNA
HYPOTHETICAL: no
                                                                                                       TGA 2728
                                                                                                                                  TAA 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ANTI-SENSE: no
ORIGINAL SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 53202
                                                                                                                                  1160
                                                                                                       2726
                         1040
                                                    2666
                                                                                                      8
                                                                      셤
                         용
                                                    ò
```

2186

619

2246

619

2306

739

2365

2425

2545

2605

1946

363

2066

2126

2186

543

2246

663

603

2306

2425

843

783

2485

2545

셤

```
964 ACAAGCCTTGCCACCAAGGGAGTCGTTCACATTGATGTTATCATGCTGGCGCACAACCCC 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2307 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 844 IGGATAIGCCAIGAIIGGAGGGACGCACACIGCIIAAAAIICIIGAAGAAIIGCIAIGAC 903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              904 geerreceggaaakegeeakegrearacriterreakereearrerreeeereereere 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       724 AAGGGCATTAACTTTGCCCCACGTCATTGAGGATGCCCCATCTTATCCCGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2666 GGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                                                                      1887 AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC
                                                                                                                              304 AGCTACTCCATACTGACTTGCTCTCTGAAAGATCATCCTGATGGGAAAGTTGAGAGACTG
                                                                                                                                                                                                                                                                      2007 GCACTCAACTIGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                              484 GCAATTCTTGATGGAGGAATTCCATTTAACAAGGCCTATGGGATGACTGCATTTGAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2127 CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2247 GATGTCGGAGGCGCCACTGGGCCCGTCCACCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2366 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2426 TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2546 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2606 GGCGGGAAAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG
CTCCCGACCCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                              244 CTCCCTACCAAAAACCCTGATGCGCCTGTCATGTTAGACCGTATCTTGCGCCTCCTGGCT
                                                                                                                                                                             1947 TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                            364 TATGGCCTTGCTCCTGTTTGCAAATTCTTGACCAAGAACGAGGACGGTGTCTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                             GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 544 carescacesarccaasarrcaacaassrcrrcaaraasssaarsrcrsaccacrcracc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 664 GATGITGGTGGGGCTGGAGCTGTCGTTAACACCCATCGTCTTAAATACCCTTCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              784 gadcarcirciccecacarcirciracicicceaaccacaccirricarcaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2486 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3, Application US/09500569; Patent No. 6329204; APPLICANT: CAPPLICANT: APPLICANT: CAPPLICANT: CAPPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATCTGCTCC 2736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1144 GGCTCAAGTCC 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2726
  1827
                                                                                                                                                                                                                                                                                                                                                                2067
                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 සු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                   g
                                                                                                                            셤
                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                      8
                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGATCATGGCCAAGGACGGGCCGCGTTCCTCCTCCACGGGGAAATCGCGGGCACAG 1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64 GAAACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGCACACCTCTTTGCCATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cracicastricastricraciantearicaricanaaaacastearicanciastricar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1368;
                                                                                                                                                                      APPLICANT: VAN DORSSELAERE, Jan
APPLICANT: RITIG, Bernard J.M.
APPLICANT: INZE, DIFK G.
APPLICANT: ADAMIN, Lise
APPLICANT: GOUGHT, Mary E.
APPLICANT: KNIGHT, Mary E.
APPLICANT: LEGRAND, Michel
TITLE OF INVENTION: MODIFICATION OF LIGNIN SYNTHESIS IN
TITLE OF INVENTION: PLANTS
NUMBER OF SQUENCES: 7
CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN, L.L.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/204,288
FILING DATE: 10-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 618.2; DB 2;
Pred. No. 2.2e-156;
0; Mismatches 288;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REPERENCE DOCKET NUMBER: 206860/SEE36543/UST TELECOMMUNICATION INFORMATION: TELEBRAK: (202) 861-3000 TELEBRAK: (202) 861-3000 TELEBRAK: 6714627 CUSH INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 1368 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                    E: CUSHMAN DARBY & CUSHMAN, L.L.P. 1100 New York Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIPICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9119279.9
FILING DATE: 10-SEP-1991
PRIOR APPLICATION DATE: PCT/GB92/01460
FILING DATE: 09-SEP-1992
ATTORNEY/AGENT INFORMATION:
ATTORNEY/AGENT INFORMATION:
NAME: KOKULIS, Paul N.
REGISTRATION NUMBER: 16,773
                                                                                                         Sequence 1, Application US/08204288 Patent No. 5959178 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 20.4%;
Best Local Similarity 73.5%;
Matches 802; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 20005-3518
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          U.S.A.
  1160 TAA 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 1100
CITY: Washing
STATE: D. C.
COUNTRY: U.S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-204-288-1
                                                                                           US-08-204-288-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
```

2725

요 ò 요 ઠે

ઠે

```
TYPE: DNA ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
Matches 802; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
US-09-971-823B-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-971-823B-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1947
                                                                                                                                                                                                                                             2606
                                                                                                                                                                                                                                                                                                                                               2666
                                                                                                                                                                                                                                                                                                                                                                                                                                              2726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                  g
                                                                                                                                                                                 8
                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                      ð
                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGATATGCCATGACTGGAGTGACGATGCGCGAAGTTCCTCAAGAACTGCTACGAT 2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCTACTCCGTGCTCCACCTCCGCGACCTCCCGATGGCAAGGTCGAGCGGCTC 1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC 2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGATCATGGCCAAGGACGGGCGGCGCGTTCCTCCACGGGGAAATCGCGGCACAG 1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CICCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCCCAACACAGAACCCTGATGCACCAGTATGTTGGACCGTATATTGCGCCTATTGGCT 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              334 IGCIACAATAICCICICTITITICICCCCCACTCICCCCTGAIGGCAAGGTIGAGAGGCTC 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATGGTCTCGCCCCCGTTGCCAAGTACTTGGTTAAGAACGAAGATGGTGTCTCCATTGCT 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94 GAGACTCAGATTACCCCAACCCACGTATCTGATGAAGAAGCAAACCTTTTCGCCATGCAA 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  814 GAGCATGTAGGTGGAGATATGTTTGCGAGTGTTCCGAAAGCTGATGCTATTTTATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     crascoastricricircontesaricanteriorantesacacinas de reservados estas en contra en contr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     214 gaaarcaragccaaggcragcccragrarcarcrrrcccccacraacarrcrrcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGCTCAACCTCATGAACCAGGACAAAGTCCTCATGGAAAGCTGGTACTATTTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    514 gcagrictrigaaggaaggcarriccarrraacaaggcrrarggaargacagccrrrgagrac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arcacaardaadaaatrcrrdagaccracacarrrrdagagrcrraaarcrcrdgrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGTCGGAGGCGGCACTGGGGCCGTCCACCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGTTGGTGGGACTGGAGCTGTAATCAACATGATTGTCTCAAAGCATCCCACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       754 AAGGCCATTAATTTTGATTTGCCTCATGAAGATGCCCCATCTTATCCTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2366 AAGCACGICGGAGGCGACAIGTICGICAGCGIICCAAAGGGAGAIGCCAITITCAIGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
APPLICANT: Shen, Jennie
TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs
TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs
FILE REFERENCE: BB1327 US NA
CURRENT FILING DATE: 2000-02-09
EARLIER APPLICATION NUMBER: 60/119,587
EARLIER FILING DATE: 1999-February-10
NUMBER OF SEQ ID NOS: 28
SOFTWARE: Microsoft Office 97
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                         ï
                                                                                                                                                                                                                                                                                                                                                                      Length 1370;
                                                                                                                                                                                                                                                                                                                                                                      Query Match 19.9%; Score 603.8; DB 3; Length Best Local Similarity 71.9%; Pred. No. 1.7e-152; Matches 802; Conservative 0; Mismatches 312; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCT
                                                                                                                                                                                                                                                                            TYPE: DNA
CORGANISM: Glycine max
US-09-500-569-3
                                                                                                                                                                                                                                                    LENGTH: 1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음 장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCIACTCCGIGCICACGIGCACCTCCGCGACGICCGAIGGCAAGGICGAGCGCTC 1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCACTCAACTTGATGAACCAGGACAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT 2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGATCATGGCCAAGGACGGGCGCGCGTTCCTCCACGGGGAAATCGCGGGCACAG 1826
                                                                                                                                                2605
                                                                                                                                                                                                  1053
                                                                                                                                                                                                                                                   2665
                                                                                                                                                                                                                                                                                                     1113
                                                                                                                                                                                                                                                                                                                                                    2725
                                                                                                                                                                                                                                                                                                                                                                                                    1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGCCATGCAG 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chadecadrdenterierentecandanterieraanteadearingadenteatente 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           214 daaaicaiadechaddecrddecerddigircarcirireceeerdacairrerreread 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    274 creceaacacadaaceerdargeaceerrargragaceerararigeeerrarideer 333
                                                                                                 993
TGGATTTGCCACGATTGGAGTGATGAGCACTGCTTGAAGTTTTTTGAAGAACTGCTACGAG 933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGACTCAGATTACCCCAACCCACGTATCTGATGAAGAAGCAAACCTTTTCGCCATGCAA
                                                                                 994 rcradcriedccacaaaaggigigericacarcgargrangrigiredcacaraarcca
                                                                                                                                                                                                                                                                                CTGGCGAGCGCCTCCGTGCTCCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                                                                                                                                                                                                                   GGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG
                                                                                                                                                                                                                                                                                                                                                    GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                                    2486 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC
                                                                                                                                                     2546 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3, Application US/09971823B
Patent No. 6610521
GENERAL INFORMATION:
APPLICANT: Caboon, Rebecca E.
TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs
FILE REFERENCE: BB1327 US NA
CURRENT APPLICATION NUMBER: 05/99/971, 823B
CURRENT FILING DATE: 1209-05-17
PRIOR APPLICATION NUMBER: 60/119,587
NUMBER OF SEQ ID NOS: 28
SOFTWARE: Microsoft Office 97
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ξ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1370;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGGAACCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATCTGCTCCTCTGTGTGATGTTCATGGTTCTT 2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19.9%; Score 603.8; DB 3; larity 71.9%; Pred. No. 1.7e-152; Conservative 0; Mismatches 312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       raagricrirggcarggarrcargrcaagcrgcar 1208
```

(67)..(1170)

```
2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2725
                                                                                                                                                2246
                                                                                                                                                                                                                                                                     2365
                                                                                                                                                                                                                                                                                                                                 2425
                                                                                                                                                                                                                                                                                                                                                                                          2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1173
                                                                                                                                                                                                          2306
                                                                                                                                                                                                                                                                                                                                                             873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  993
                                                                                                                                                                                                                                                                                                   813
                            GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                      carggaacatrccaaggttraacaaggtrtcaacaagggaatggctgatcacctctacc
GCGCTCAACCTCATGAACCAGGACAAAGTCCTCATGGAAAGCTGGTACTATTTGAAAGAT
                                                 CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                  ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTTCGAGGCCTTCGAGACCGTGGTC
                                                                                                                                                                           Arcacaardaagaaaatrctrgagaccracacaggrrtrgagagrctraaarcrcfggrr
                                                                                                                                                                                                          GATGTCGGAGGCGGCCTGCTCCTCAGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                        GATGTTGGTGGGGCTGTGTAATCAACATGATTGTCTCAAAGCATCCCACTATT
                                                                                                                                                                                                                                                                    AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                     AAGGGCATTAATTTTGATTTGCCTCATGTCATTGAAGATGCCCCATCTTATCCTGGAGTG
                                                                                                                                                                                                                                                                                                                                 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                  TGGATATGCCATGACTGGAGTGACGACCATTGCGCGGAGGTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                                                                             TGGATTTGCCACGATTGGAGTGATGAGCACTGCTTGAAGTTTTTGAAGAACTGCTACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAAGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          994 reraderriedeceacadadegrerederrederrederengarearerredeacaradareca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cereceaaagacaaacagagaaagagrrrrgaggcrcregccaaagggrcregarrccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCTTCCAAGTCATGTCCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTTTCCGAGTTGTTTGCTGTTTTCAATACCAACATCATGGAATTTCTCAAAAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5, Application US/08991677A

Patent No. 6252135

GENERAL INFORMATION:
APPLICANT: Chiang, Vincent L
APPLICANT: Carraway, Daniel T
APPLICANT: Smeltzer, Richard H
TITLE OF INVENTION: Production of Syringyl Lignin in Gymnosperms
FILE REFERENCE: 50617
CURRENT APPLICATION NUMBER: US/08/991,677A
CURRENT RILING DATE: 1997-12-16
EARLIER FILING DATE: 1996-12-16
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           raagricriregeargaarreargicaagergear 1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATCTGCTCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
PORGANISM: Liquidambar styraciflua
PEATURE:
NAME/KRY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
US-08-991-677-5
                                                         514
                                                                                                                                                                                                                                                                                                   754
                                                                                                                                                                                                                                                                                                                                                             814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1114
                             2067
                                                                                                                    574
                                                                                                                                                                             634
                                                                                                                                                                                                          2247
                                                                                                                                                                                                                                                                                                                                 2366
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1174
454
                                                                                       2127
                                                                                                                                                  2187
                                                                                                                                                                                                                                        694
                                                                                                                                                                                                                                                                     2307
                                                                                                                                                                                                                                                                                                                                                                                          2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2666
                                                                                                                                                                                                                                                                                                                                                                                                                        874
                                                                                                                                                                   8 6 8
                                                                                                                                                                                                                                                               $ A
                                                                                                                                                                                                                                                                                                                                                     6 B
                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                            δ
                                                        g
                                                                          જે
                                                                                                         g
                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
```

```
2685
                                                                                 1729
                                                                                                                                 1789
                                                                                                                                                                                 1849
                                                                                                                                                                                                                                1909
                                                                                                                                                                                                                                                                                 1969
                                                                                                                                                                                                                                                                                                                              2029
                                                                                                                                                                                                                                                                                                                                                                               2089
                                                                                                                                                                                                                                                                                                                                                                                                                               2149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                       350
                                                                                                         170
                                                                                                                                                         230
                                                                                                                                                                                                                                                                                                                                                       470
                                                                                                                                                                                                                                                                                                                                                                                                                                                       590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGTICGAGGCATIGGCCAAAGGGGCCGGATITCAGGGCTICCAAGTCAI---GIGCTG
                                                                                                                                                                                               231 AGGTGCGCACATATCCACATCTGACATAGCCTCTAAGCTGCCCACAAAGAATCCAGATGC
                                                                                                                                                                                                                               ACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCAC
                                                                                                                                                                                                                                                                                                                                                                               CAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGGCGGAATCCC
                                                                                                                                                                                                                                                                                                                                                                                           2090 ATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                             2389 CGTCAGCGTTCCAAAGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                831 IGITAGIGITCCAAAAGGAGATGCCATTTTCATGAAGTGGATATGTCATGATTGGAGGGG
                                                                                  1670 AGTCTCGGACGAGGCGAACCTCTTCGCCATGCAGCTGGGGAGCGCCTCCGTGCTCCC
                                                                                                                                 CATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGCCC
                                                                                                                                                1790 GGGCGCGTTCCTCTCCACGGGGGAATCGCGGCACAGCTCCCGACCCAGAACCCCGAGGC
                                                                                                                                                                                                                                                       Agccercarectreaccerargercecererrescrascracrererrerascere
                                                                                                                                                                                                                                                                               1910 CCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGGCGCCGGTGTGCAA
                                                                                                                                                                                                                                                                                                      351 rerecedacerecereaceacadaareaaaaeerrraceacerrecaceerricaaa
                                                                                                                                                                                                                                                                                                                                GTTCTTGGTCAAGAACGAGGACGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGA
                                                                                                                                                                                                                                                                                                                                                     411 ATTCTTGACCAGAAACGATGATGGAGTCTCCATAGCCGCTCTGTCTCTCATGAATCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2210 AACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2270 CGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2329 CCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   951 garcerridergaarideariceredeedeedeedeadeedaadeereedeadeeraadeeage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCCACATCGACTCATGTTGGCCCACAACCCAGGCGGGAAAGAGAGGACACAGAA
                                                                                                         Gaps
                                                           4;
                                  Length 1380
                                                          Indels
                                   Score 589; DB 3; L
Pred. No. 1.7e-148;
0; Mismatches 290;
                                 19.4%;
Best Local Similarity 72.8%;
Matches 787; Conservative (
; LOCATION: (6
US-08-991-677-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2449 (
                                                                                                                                                                                                                                  1850
                                                                                                                                    1730
                                                                                                                                                                                                                                                          291
                                                                                                                                                                                                                                                                                                                                 1970
                                                                                                                                                                                                                                                                                                                                                                                 2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2629
                                                                                                                                                         171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       771
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                    ద
                                                                                                                                                    g
                                                                                                                                                                               ò
                                                                                                                                                                                                    g
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                        ठ
                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                   ⋩
                                                                                                                                  ð
```

셤 Š 셤

용 ò

```
2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2485
                                                                                                                                                      GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2126
                                                                                                                                                                                                                                               2186
                                                                                                                                                                                                                                                                                                                                    2187 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2246
                                                                                                                                                                                                                                                                                                                                                                                                                    2247 GATGTCGGAGGCGGCACTGGGGCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG 2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2486 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC 2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1047 GGTGGGGAAAGAGAACAAGAGAAAAAGAGTTTGAGGCTCTGGGCCAAAGGCTCTGGATTC 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           998
                                                                                                                                                                                                                                                                                                                                                                             989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    747 aagadcarraarrirdarrirgecccargrearigaadargccccarcrrarccagaagig 806
TATGGTCTCGCCCCTGTTGCTAAGTACTTGGTCAGGAACGAAGATGGTGTCTCCATTGCT 446
                                                                                                             206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 17. Application US/09971823B

Fatent No. 6610521

GENERAL INFORMATION:

APPLICANT: Cahoon, Rebecca E.

TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs
TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs

TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs

CURRENT APPLICATION NUMBER: US/09/971,823B

CURRENT APPLICATION NUMBER: 60/119,587

PRIOR PILING DATE: 1999-02-10

NUMBER OF SEQ ID NOS: 28

SOFTWARE: Microsoft Office 97

SEQ ID NO 17

LENGTH: 1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        807 gaacardriddiddadarardrididdadrorriddaaadcrdardcrarrirrardaad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             987 ICTAGCTTGGCCACAAAGGGTGTGGTTCACATCGATGTGTGTTGTTGTTGGCTCACAATCCA
                                                                                                                                                                                         CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                             687 GATGTTGGTGGAGGAGTGGAGCTGTAGTCAACATGATTGTCTCAAAGTATCCCACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2307 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2366 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      927 gcactaccagaraargggaagrgarrgrggcggaargcarrccrcggrggcrccagac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2546 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCGGG---AAAGAGAGGACACAGAAGGAGTTCGAGGCATTTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                    ser caiggaacgdarccaaggiftaacaaggifticaacaaggggaiggcigarcarctaac
                                                                                                           447 GCTCTCAACCTCATGAACCAGGACANAATCCTCATGGAAAGCTGGTACTATTTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1107 caagerriccaagrecergigergerricaaracerae 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2663 CAGGCTTCCAAGT-CATGTGCTGCGCTTTCGGCACTCAC 2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Glycine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
NAME/KEY: unsure
LOCATION: (472)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
US-09-971-823B-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2606
                                                                                                                                                                                                                                                    2127
                                                                         2007
                                                                                                                                                             2067
                             387
                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                               임
                                                                                                                                                                                               a
                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                           à
                                                                      Š
                                                                                                                                                               ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGGCGAACCTCTTCGCCATGCAG 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGCGAGCGCCTCCGTGCTCCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            887 AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCCGGCTC 1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .947 TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CICCCAACACACACCTGAIGCACCGTTAIGTIGGACCGTATAITGCGCCTCTIGGCT 326
         1071 GGAGTTTGAGGCCTTGGCCAAGGGGGCTGGATTTGAAGGTTTCCGAGTAGTAGTCCTCGTG 1130
                                                                                               1131 cectracaaracarcarcarcaartrrraaagaarrrraagarrraagaccrracraccaecrra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      87 chchactchchactcchactchrotatcharcharchachcharchartccharchard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        147 chadecadridectedracteceranderreteaareadererraaderreareng 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327 IGCIACAATAICCICTCITITICTCITCGCACTCICCCTCAIGGCAAGGITGAGAGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCCACGGGGGAAATCGCGGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>Ġaaaircanagccaagccracccracaccirriccccrccaacarrecraca</u>
                                                      CGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Cahoon, Rebecca E.
APPLICANT: Rafalski, Antoni
APPLICANT: Rafalski, Antoni
APPLICANT: Rafalski, Antoni
APPLICANT: Rafalski, Antoni
APPLICANT: Shen, Jennie
TITLE OF INVENTUR: Piant Caffeic acid 3-O-Methyltransferase Homologs
FILE REFERENCE: BB1327 US NA
CURRENT APPLICATION NUMBER: US/09/560,569
CURRENT FILING DATE: 1099-February-10
NUMBER FILING DATE: 1999-February-10
NUMBER OF SCO ID NOS: 28
SOFTWARE: Microsoft Office 97
SEQ ID NO 17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 υ,
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18.4%; Score 556.6; DB 3; 72.2%; Pred. No. 9.2e-140; ive 0; Mismatches 290;
                                                                                                                                                                                                                                                                                               Sequence 17, Application US/09500569
Patent No. 6329204
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 72.2
Matches 765; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NAME/KEY: unsure
| LOCATION: (1262)
| FEATURE:
| NAME/KEY: unsure
| LOCATION: (1302)
| US-09-500-569-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
MAME/KEY: ungure
LOCATION: (472)
FEATURE:
LOCATION: (1156)
FEATURE:
                                                                                                                                             2746 A 2746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (1180)
                                                                                                                                                                                         À 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unsure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 1314
                                                                                                                                                                                                                                                         RESULT 13
US-09-500-569-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: u
LOCATION: (
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      267
                                                                                                                                                                                         1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                         2686
```

원

ò

g ð g δ g ઠે g ઠે

ð

986

2605

```
987 TCTAGCTTTGGCCACAAAGGGTGTGGTTCACATGGATGTGATCATGTTGGTCAACAATCCA 1046
                                                                                                                                                                                                                                                                                                                                                                         GGCGGG---AAAGAGAGACACACAGAAGGAGTTCGAGGCCATTGGCCAAAGGGGCCGGATTT 2662
                                                                                                                                                                                                                                                                                                                                                                                                                           1047 GGTGGGGAAAGAGAACAAGAGAAAGAGTTTGAGGCTCTGGGCCAAAGGCTCTGGATTC 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2006 CGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGA 2065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGATCATGGCCAAGGACGGCCGCGCGTTCCTCCTCCACGGGGAAATCGCGCCACA 1825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/09453323
; Sequence 1, Application US/09453323
; Patent No. 6441272
; GENERAL INFORMATION:
; APPLICANT: Ye, Zheng-Hua
; TITLE OF INVENTION: MODIFICATION OF LIGNIN CONTENT AND COMPOSITION IN TITLE OF INVENTION: PLANTS
; FILE REFERENCE: 235.00090101
; CURRENT APPLICATION NUMBER: US/09/453,323
; CURRENT FILING DATE: 1999-12-02
; PRIOR FILING DATE: 1998-12-02
; PRIOR FILING DATE: 1998-12-02
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
; LENGTH: 1507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140 TGAGCTAATGGCTAAGGCTGGTCCAGGTGCAGCTATTTCTCCTTCTGAATTAGCTGCTCA 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              320 TIATAGICIGGCICCCGICIGIAAGIACTIGACTAAGAAIGCIGAIGGIGITICIGIIGC 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80 Arrichgradrichterachrechargerechaaarcageegradachreachter 139
807 GAACATGTTGGTGGAGATATGTTTGTCAGTGTTCCAAAAGCTGATGCTATTTTATGAAG 866
                                                                                              867 IGGATTTGCCACGATTGGAGTGATGAGCACTGCTTGAAGTTTTTTGAAGAACTGCTATGAG
                                                                                                                                                                                                           927 gcactaccagaraargggaaagrgarrcregcegaargcarrcrrccegregcrecrecagae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1706 GCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260 rrcriacrcretrcrcaarreracrcrragaacacrecrearaccagretreagagecr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGC
                                                       TGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                           GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC
                                                                                                                                                                                                                                                               2546 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ecricica circa da a constra de contra de co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1886 CAGCTACTCCGTGCTCCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGGCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1646 CGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGGAACCTCTTCGCCATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTCCCGACCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cgagagccagagtaacagtctcactcacagagagaggaggagctttcttatttgccatgca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17.3%; Score 523; DB 3; Length 1507; 69.1%; Pred. No. 1.2e-130; tive 0; Mismatches 330; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2663 CAGGGCTTCCAAGT-CATGTGCTGCGCTTTCGGCACTCAC 2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGGITTCCAAGTCCCTGTGCTGTTCAATACCTAC 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Nicotiana tabacum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 743; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-453-323-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1766
                                                    2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1826
                                                                                                                                                           2486
                                                                                                                                                                                                                                                                                                                                                                            2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                           셤
                                                                                                                                                           8 6
                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                셤
8 A
                                                                                                                                                                                                                                                    ∂
                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGAACCTCTTCGCCATGCAG 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGATCATGGCCAAGGACGGGCCGGCGCGTTCCTCTCCACGGGGGAAATCGCGGCACAG 1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTC 2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2366 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 2425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG 2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGTTGGTGGAGGAACTGGAGCTGTAGTCAACATGATTGTCTCAAAGTATCCCACTATT 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               267 creccaacacacaccercarececerrarerrarerracacerrararracecererraceer 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         327 recracaararcerereritrererreseaererecereareseaaserreassasses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   387 rangererececeretrecraagractregreaggaacgaagaregrererecarreer 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGTCCTTGAAGGGGGTATTCCATTTAACAAGCATATGGAATGACAGCCTTTGAATAC 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGGCATTAATTTTGATTTGCCCCATGTTGAAGATGCCCCATCTTATCCAGGAGTG 806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   147 CTAGCCAGTGCCTCGCTATGGTTCTCAAATCAGCTCTTGAGCTTGATCTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĠAAATCATAGCCAÁGGCTGGCCCTGGTGTTCACCTTTCCCCCTCCGÁCATTGCTTCTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1887 AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            447 GCTCTCAACCTCATGAACCAGGACANAATCCTCATGGAAAGCTGGTACTATTTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATGGCACCGGACTCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 556.6; DB 3;
Pred. No. 9.2e-140;
0; Mismatches 290;
                                                                                                                                                                                                                                                                                                                       H
                                                                                                                                                                                                                                                                                                                                                                                                                                 or
                                                                                                            ö
  ö
                                                                                                                                                                                                                or
                                                                                                                                                                                                                                                                                                                          ö
  Ö
                                                                                                         Ö
                                                                                                                                                                                                                                                                                                                          U
                                                                                                                                                                                                                                                                                                                                                                                                                              Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 18.4%;
Best Local Similarity 72.2%;
Matches 765; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              ΰ
ΰ
                                                                                                         ပဲ
                                                                                                                                                                                                                                                                                                                       ບ
                                                                                                                                                                                                                ບັ
                                                                                                                                                                                                                                                                                                                                                                                                                                 n = A,
                                                                                                                                                                                                                                                                                                                          À
                                                                                                                                                                                                                   ,
A
  ď
                                                                                                         à
                                                                                                                                                                                                                   ¤
  c
                                                                                                                                                                                                                                                                                                                          C
                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY: unsure
LOCATION: (1302)
GTHER INFORMATION: n
US-09-971-823B-17
                                                                                                                               FEATURE:
NAME/KEY: unsure
LOCATION: (1180)
OTHER INFORMATION: n
                                                                                                                                                                                                                                    FEATURE:
NAME/KEY: unsure
LOCATION: (1262)
OTHER INFORMATION: n
OTHER INFORMATION:
                                               NAME/KEY: unsure
LOCATION: (1156)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
```

1765

79

1945

319

```
2605 AGGCGGGAAAGAGAGACACAGAAGAGTTCGAGGCAITGGCCAAAGGGGCCGGAITTCA 2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2305
                                                                                                                                                                                                                                      2364
                                                                                                                                                                                                                                                                                     2545 CACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACACCC 2604
                                                                                                                                     2186 CATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGT 2245
                                                                                                                                                                                                                                                                                                                                                                                         2485 TGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGA 2544
                                       TGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTA 2125
                                                                                       2126 TCATGGCACCCGCGGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCAC 2185
                                                                                                                                                                                                                                                                                                                                       2425 GIGGATATGCCATGACTGGAGGACCACCATTGCGCGGAGGAGTTCCTCAAGAACTGCTACGA 2484
                                                                                                                                                                                                     620 TGATGTTGGTGGAAGGGTGCTACAGTTAACATGATTGTCTCTAAATATCCCTCTAT 679
                                                                                                                                                                                                                                                             680 TAAGGCATTAACTTTGATTTGCCACATGTAATTGGAGATGCTCCAACTTACCCCGGTGT 739
                                                                                                                                                                                                                                                                                                                                                       860 AGCACTACCTGCAAATGGGAAGGTGTAATTGCAGAGTGCATACTTCCAGAGGCCCCAGA 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                             920 TACATCACTIGCAACTAAGAATACAGTACATGTIGATATTGTGATGTTAGCACATAACCC 979
                                                                                                                                                               619
                                                      380 CCCACTTTTGCTTATGAATCAAGATAAAGTTCTTATGGAGAGCTGGTACCACTTAAAAGA 439
                                                                                                     2246 CGATGTCGGAGGCGCACTGGGCCGTGCTCACCATGATGCCAAATACCCATCAAT
                                                                                                                                                                                                                                      2306 GAAAGGGATCAACTTCGA-CCCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGACGTCTGAAG 2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1040 TGGTTTCGCAAGGCT-TGTTGCGCTTACAACACTTGGGTCATGGAATTCAACAAG 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2665
                                                                                6 B 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                               8
8
                  음
```

Search completed: November 1, 2006, 11:48:35 Job time : 564.148 secs

```
November 1, 2006, 11:25:56; Search time 3876.36 Seconds (without alignments) 9604.757 Million cell updates/sec
                                                                                                                                                                                                                                                                                    1 cacctgttcagtttgattcc......acttcgaacaaaaaaaaa 3030
GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                      18892170 segs, 6143817638 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Published Applications NA Main:*
                                                                                                                                                                                                                           US-10-702-319A-113_COPX_41_3070
3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                           - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                       Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                 IDENTITY NUC
                   Copyright
                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                             OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
```

1: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US07_PUBCOMB.seq:*
2: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US08_PUBCOMB.seq:*
3: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US08_PUBCOMB.seq:*
4: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US09_PUBCOMB.seq:*
5: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US09_PUBCOMB.seq:*
6: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US09_PUBCOMB.seq:*
7: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_PUBCOMB.seq:*
8: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_PUBCOMB.seq:*
9: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_PUBCOMB.seq:*
10: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_PUBCOMB.seq:*
11: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_PUBCOMB.seq:*
12: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_PUBCOMB.seq:*
13: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_PUBCOMB.seq:*
14: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
15: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
17: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
18: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
18: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11A_PUBCOMB.seq:* Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Sequence 12, Appl Sequence 5, Appli Sequence 5, Appli Sequence 5, Appli Sequence 11, Appl Sequence 11, Appli Sequence 3, Appli Sequence 3, Appli Sequence 60, Appi Sequence 60, Appi Sequence 107, App Sequence 12, Appi Sequence 12, Appi Sequence 12, Appi Sequence 113, App Sequence 113, App Sequence 113, App Description US-10-137-036-113 US-10-702-319A-113 US-10-927-641-113 US-10-137-036-60 US-10-702-319A-60 US-10-927-641-60 US-10-174-693-107 US-10-174-693-107 US-10-174-693-107 US-10-174-693-107 US-10-174-693-107 US-11-057-518-5 US-10-424-599-20299 US-10-469-993-11 US-10-464-610-3 US-09-796-256A-5 US-10-091-009-5 SUMMARIES Length DB 3070 3070 3070 2096 2096 2096 1630 661 661 1503 1503 1503 1503 1486 1370 Query Match 3030 2020.4 2020.4 1429.6 638.2 638.2 638.2 631 631 631 631 613.4 603.8 Score 3030 Result

; 0

Gaps

ö

Length 3070; Indels

DB 6; ö

Query Match
100.0%; Score 3030;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3030; Conservative 0; Mismatches

TYPE: DNA ORGANISM: Eucalyptus grandis

US-10-137-036-113

US-10-681-878A-5 Sequence 5, Appli US-10-464-610-17 Sequence 17, Appl US-10-9129-298-3 Sequence 17, Appl US-10-703-091-1 Sequence 17, Appl US-10-9129-298-4 Sequence 17, Appl US-10-955-745-12 Sequence 17, Appl Sequence 17, Appl US-10-955-745-149 Sequence 149, Appl US-10-955-757-149 Sequence 149, Appl US-10-955-757-149 Sequence 150, Appl US-10-955-745-150 Sequence 150, Appl Sequence 150, Appl US-10-955-745-10 Sequence 150, Appl US-10-955-745-10 Sequence 17, Appl US-10-955-745-10 Sequence 17, Appl US-10-955-745-10 Sequence 17, Appl US-10-955-745-40 Sequence 21, Appl US-10-955-745-40 Sequence 24, Appl US-10-955-745-40 Sequence 25, Appl US-10-425-114-25028 Sequence 25, Appl US	ALIGNMENTS and Methods for the 1 of Gene Expression 1/137,036 01/00115 0. US20030101478A1 09/724,624 0. US20030101478A1 09/598,401 0. US20030101478A1 60/146,591 0. US20030101478A1 60/146,591 0. US20030101478A1 09/276,599 rsion 4.0
0 . 0 0 0 0 0	10137(h ions ation ations ation 0S/10, 4-30 S. No S. No 5. No 5. No 5. No
11	ALIGNME -036-113 e 113, Application US/10137036 tion No. US20030101478A1 ANT: Breers, Ranjan ANT: Rice, Stephen ANT: Ragelten, Clare ANT: Wood, Marion ANT: Vood, Marion ANT: Vood, Marion ANT: Wood, Marion APPLICATION: WOMBER: US/10/137,03 T. FILING DATE: 2002-04-30 APPLICATION NUMBER: US. No. US200 RILING DATE: 2000-11-28 APPLICATION NUMBER: U.S. No. US200 FILING DATE: 2000-05-24 APPLICATION NUMBER: U.S. No. US200 FILING DATE: 2000-02-24 APPLICATION NUMBER: U.S. No. US200 FILING DATE: 1999-07-30 APPLICATION NUMBER: U.S. No. US200 FILING DATE: 1999-03-25 APPLICATION NUMBER: U.S. No. US200 APPLICATION NUMBER: U.S. NO.
44.600000000000000000000000000000000000	16-113 15. Application of the property of the
88	1131 1131 1131 1131 1131 1131 1131 113
11000000000000000000000000000000000000	RESULT US-10- US-10- SCHOOL RESULT RE

1111 TOTACCCTORACTACTORACTACACTACACTACACTACAC
6 m 6 m 6 m 6 m 6 m 6 m 6 m 6 m 6 m 6 m
1 OCCUPITIONITIONITIONITIONITIONITIONITIONITIO

ð 요 ò a ઠે g 8

임

셤

à

셤 ઠે 원 8 В ò a ઠે g ò g ઠે g ઠે g

ò

```
120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATAATAGATTCACCAGAGGGATAAAAAGGTAGGGAGATAGGGGGATCTCCCCGTCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCGGGTAGGTTGAAAATAAGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCGTTATGCATTGCATCCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281 TAGTCCTTTAGAAAGTCCCATTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    581 ATTAGGGCTATGATGGTTCGATTGAGATTCGGTGGTATGATGATGCCAGAATTAAAAAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCACTGATGAGAATAGTTCATCCTGGAGTATATCCCAATGATGCTGGTAGAAGAGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TICAAGCCATCTGGACGCGCCTTGGTAAGTCCCAGTTGGAAAGTAGCCTCTCTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCGTTATGCATTGCATCGATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGTCCTTTAGAAAGTCCCATTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGCCCGGAATTGACGTCTACATTTTCTGACTTTAAATTGATGTAGAACCTCTTAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   341 ACAGCCCGGAATTGACGTCTACATTTTCTGACTTTAAATTGATGTAGAACCTCTTAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361 ATTAAAATATTGTCCTGAATTTGACGTCCACTGACAAAAGCGCCTTTGCTCCTGGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTACAGGCAGGTAGGGCTTAAGGCGATTGGCAATCACCTTAGAAATGATCTTATATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAATTACAAAGACTGATGGGGGGGTATTGGTCAATTGTTCAGGATGTGGTACCTTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAATTACAAAGACTGATGGGGCGGTATTGGTCTAATTGTTCAGGATGTGGTACCTTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTAGGGCTATGATGGTTCGATTGAGATTCGGTGGTATGATGCCCAGAATTAAAAAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CACCTGTTCAGTTTCCCTTGAGATGACCTACAGTGATAGCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
          FRIOR APPLICATION NUMBER: U.S. NO. 60/425,087
FRIOR APPLICATION NUMBER: U.S. NO. 10/137,036
FRIOR APPLICATION NUMBER: U.S. NO. 10/137,036
FRIOR APPLICATION NUMBER: U.S. NO. 09/724,624
FRIOR APPLICATION NUMBER: U.S. NO. 09/724,624
FRIOR APPLICATION NUMBER: U.S. NO. 09/598,401
FRIOR APPLICATION NUMBER: U.S. NO. 09/598,401
FRIOR FILING DATE: 2000-06-20
FRIOR FILING DATE: 2000-06-20
FRIOR FILING DATE: 1099-07-30
FRIOR FILING DATE: 1999-07-30
FRIOR PELING DATE: 1999-07-30
FRIOR FILING DATE: 1999-07-30
FRIOR FILING DATE: 1999-07-30
FRIOR FILING DATE: 1999-03-25
SOFTWARE: FASTESQ FOR WINDOWN VERSION 4.0
FRIOR FILING DATE: 1999-03-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100.0%; Score 3030; Best Local Similarity 100.0%; Pred. No. 0; Matches 3030; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                            Eucalyptus grandis
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Euca
US-10-702-319A-113
                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                   2400
                                                                                                                                                                                                                                             2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2980
                                                                                                                                                            2380
                                                                                                                                                                                                                                                                                   2460
                                                                                                                                                                                                                                                                                                                         2500
                                                                                                                                                                                                                                                                                                                                                                    2520
                                                                                                                                                                                                                                                                                                                                                                                                            2560
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGCGTACTCCCTGTGTACCCCGACACGAGCCTAGCGACCAAGAATGTGATCACCACATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                      GCTTCGAGGCCTCGAGACCGTGGATGGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCA
                                                                            gerregaggeerregagacegregareregaggegegegegegegegegegereregeg
                                                                                                                    TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGA
                                                                                                                                              TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGA
                                                                                                                                                                                                                              AGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGGGACATGTTCGTCAGCGTTCC
                                                                                                                                                                                                                                                                                   AAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGC
                                                                                                                                                                                                                                                                                                          AAAGGGAGATTTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACGATGGGC
                                                                                                                                                                                                                                                                                                                                                                    GAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                          GAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGCGTACTCCCTGTGTACCCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGCATCATGTTGGCCCACACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGGCCAAAGGGGCCGGATTTCAGGCTTCCAAGTCATGTGCTGCTGCGCTTTCGGCACTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTCATGGAGTTCCTGAAGACCGCTTCATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rcrcataaaaggaaacaaraagaagcgacrgrargarggcgcgaagrggaagrracaagar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TIGITGITITIAIGECDATAAGITITIGAGICTICCIGCADACTGATITCACAGAATGIGIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Perera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Ragleton, Clare
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Compositions of Gene Expression
FILE REPRENCE: 11000.1036c5
CURRENT APPLICATION NUMBER: US/10/702,319A
CURRENT FILING DATE: 2003-11-06
PRIOR APPLICATION NUMBER: U.S. No. 10/291,447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rcagraaarcacrrcgaacaaaaaaaa 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 113, Application US/10702319A Publication No. US20050026162A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2 ,
US-10-702-319A-113
                                                                                                                                                                                                                                             2381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2981
                                      2221
                                                                              2261
                                                                                                                      2281
                                                                                                                                                            2321
                                                                                                                                                                                                     2341
                                                                                                                                                                                                                                                                                                                         2441
                                                                                                                                                                                                                                                                                                                                                                                                            2501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3001
                                                                                                                                                                                                                                                                                     2401
                                                                                                                                                                                                                                                                                                                                                                    2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2521
```

ò

6 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4
101 TICCHTCHTGGACCACCTGGACCTHTGGACCTTTGGAAAGTCCCCGTTTGGAAAGTCCCTCTTAAAAGTCCTCTCTAAAAGTCCTCTCTAAAAGTCCTCAAAAAGTCCACCTTAAAAAGTCCCTCTTTGAAAAAAAA

		Qy 1261 AATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCCATAAACCCCTGATTAATTT 1320 Db 1301 AATAGCTCTTGTACGGGAACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTT 1360 Qy 1321 GGTGGGAAAGCGACACCCACAAAAGGTCAGATGCATCCCACGAGAGAGA
QY 2881 TTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTA 2940 Db 2921 TTGTTGTTTTATGTCTATAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTA 2980 QY 2941 ACGAAACGGCGTATATGGATGTGCCTGAATGATGATATTCTGTCTTCTTTT 3000 Db 2981 ACGAAACGGCGTATATGGATGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTT 3000 QY 3001 TCAGTAAATCACTTCGAAAAAAAAAAAAAAAAATGTGATATTCTGTCTTTTT 3040 Db 3041 TCAGTAAAATCACTTCGAAAAAAAAAAAAAAAAAAAAAA	US-10-27-641-113	Db 161 CCTCGGGTAGGTTGAAATAAGGCAAAAGTTCGCCGTTGAATTTGACAACAAAGACACC 220

Db 1001 Qy 1995 Db 1061	1038 Db 1121 100 Qy 2115 1098 Db 1181	OY 2175 GATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACA 1158	1218 Qy 2235 1218 Db 1301 280 Qy 2295	1278 2, 136 340 0y 235 1338	400 Db 1421 TTCCTGGTGT 400 Qy 2415 TTTTCATGAA 1394 Db 1481 TTTTCATGAA	460 Qy 2475 ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCA 1454 Db 1541 ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCA 1541 ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCA	220 Qy 2535 TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCC 1514 Db 1601 TGTACCCAGACACGAGCCTAGCGACAAGAATGTGATCCACATCC 580	1574 25.95 CCCACAACCCAGGGAAAGAGACACAGAAGAGTTCGAG 1574 Db 1661 CCCACAACCCAGGCGGAAAGAAGAACACAGAAGAGTTCGAG 640	Oy 2655 CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGGAC	CCTC 1694 2715 TGAAGACCGCTTGATCTGCTCGTGATGTTCATGGTTC	CGAG 1754 Qy 2775 G	GGAA 1814 Qy 2835	1874 Qy 2895 1874 Db 1961 940	Qy 2955 ATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTTTCAGTAAATCACTT GATGGCAAG 1934
TYPE: DNA ORGANISM: Escalyptus grandis -10-137-036-60 Query Match Best Local Similarity 99.3%; Pred. No. 0; Matches 2041; Conservative 0; Mismatches 11; Indels	979 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT	9 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1159 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCTTCCTT	.219 ATCATCACCAGATCGGCCAGTAAGGGTAATTAATTTAACAAATAGCTCTTGTACCGGG 	341 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAGCGACAGCC 1339 AACCCCACAAAAGGTCAGAGGTCATCCCACAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG		461 AGAITITCITICIATATICIGGGGGGGGGGGGGGGGGGGG			635 TCGACCGGCTCCGAGACCCAGATGACCCGGACCCAAGTCTCGGACGACGACGAGGACCACCAGACTCCGACGACGACGAAAGTCTCCGAAAGTCTCCGAAAGTCTCCGAAAGTCTCCAAAAGTCTCCGAACGAA	₽	1755 ATGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTCCACGGC 	815 ATCGCGGCACAGCTCCCGAACCCCGAGGCACCGGTCATGCTCGACGGATCTTC	875 CGGCTGCTGCCGCGCTACTCCGTGCTCACCTCCGCGGCCTCCCCGGATGGCAAG

셤

```
TTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCCCCATCGAG 1754
                                                                                                                                                                                    ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      titicatgaagigatatgccatgactgagtgacgaccattgcgcgaagitcctcaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TICCIGGIGICAAGGACGICGGAGGCACAIGIICGICAGCGITCCAAAGGAGAGAIGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGACCGTGGTCGATGTCGGAGCGGCACTGGGCCCGTGCTCACCATGATGGTTGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGTTGAGTATCATGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCTCCATCGCCGCACTCCAACTGAACCAGGACAAAATCCTCATGGAAAGCTGGTAT
                                                                                                                                                                                                                                                                                                                                                       caecracipaccaagiracrecegiqerecaecarecaecaecaecaececaaraecaa
                                                                                                                                                                                                                                                                                                                                                                      941 CGGCTGCTGGCCAGCTACTCCGTGGTCACGTGCACCTCCGCGACCTCCCCGAAGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                 gregacichaceecrraececeeererecaacrrerrescaagaaceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACCTGAAAGATGCGGGTCCTTGAAGGCGGAAATCCCATTCAACAAGGCGTACGGGATGACC
                                                                                                                         521 AcatatidGtGtAdGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                              TATGGAACCTCCACCACCACCACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                      TCGACCGGGTCCGAGACCCCGGACCCCAAGTCTCGGGACGACGAGGGGAACCTC
                                                                                            ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2175
                                                                                                                                                                                                                                                                                                                                                               1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2055
                                                                                                                                                                                                                                                                                                                                                                                                            1935
                                                                                                             581
                                                                                                                                  1575
                                                                                                                                                                               1635
                                                                                                                                                                                                                           1695
                                                                                       1515
                                            1455
                     161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                            8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                   8 8
                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                      ઠે
                                                                                  8 S
                                                                                                                              ò
                                                                                                                                                    a
                                                                                                                                                                              Š
                                                                                                                                                                                              g
                                                                                                                                                                                                                        δ
                                                             g
                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACCCACAAAAGGTCAGATGTCATCCCAC---GAGAGAGAGAGAGAGAGAGAGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1395 AGAGITITCTCTCTATAITCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGCCCCAACCCAAGATTGCAAAAGAGCACAAAGAGCACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCATCACCAGATCGGCCAGTAAGGGTAATATTAAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1039 CGBATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     979 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 9; Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11; Indels
                                                                                                                                                          FILE REFERENCE: 11000.103665
CURRENT APPLICATION NOMBER: US/10/702,319A
CURRENT APPLICATION NUMBER: US/10/702,319A
CURRENT APPLICATION NUMBER: US. NO. 10/291,447
PRIOR PILING DATE: 2002-11-06
PRIOR FILING DATE: 2002-11-08
PRIOR PILING DATE: 2002-11-08
PRIOR PILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: U.S. NO. 09/724,624
PRIOR APPLICATION NUMBER: U.S. NO. 09/724,624
PRIOR APPLICATION NUMBER: U.S. NO. 09/598,401
PRIOR APPLICATION NUMBER: U.S. NO. 09/598,401
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. NO. 60/146,591
PRIOR PRIOR APPLICATION NUMBER: U.S. NO. 60/146,591
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 129
SEQ ID NO 60
SEQ ID NO 60
                                                                                                        APPLICANT: Perera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Bajleton, Clara
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 99.3%; Pred. No. 0;
Matches 2041; Conservative 0; Mismatches
                                                                      Sequence 60, Application US/10702319A
Publication No. US20050026162A1
                   CGAACAAAAAAAAAA 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: Eucalyptus grandis
US-10-702-319A-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41
                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
```

2414 1480 2474 1540 2534

임

ò

ò g ઠે a ò 유 ò

g ò 셤

ઠે

셤 ð

2294 1360 2354

1300

1120 2114 1180 2174 1240 2234

1000 1994 1060 2054

1934

940

1874

1814

880

820

1634

700

```
; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-10-927-641-60
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                       ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                          a
                                                                                                                                                                            엄
                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                       ઠ
                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                     1660
                                                                                                      1720
                                                                                                                                 2714
                                                                                                                                                         1780
                                                                                                                                                                                                                                                                1900
                                                                                                                                                                                                                                                                                                                   1960
                                                                                                                                                                                                                                                                                                                                                                                                3014
                                                                                                                                                                                                                                                                                                                                                                                                                         2080
                           2594
                                                                             2654
                                                                                                                                                                                  2774
                                                                                                                                                                                                                                      2834
                                                                                                                                                                                                                                                                                         2894
                                                                                                                                                                                                                                                                                                                                            2954
                                                                                                                                                                                                                                                   GIGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                             CCCACACACCCAGGCGGGAAAGAGAGGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                            CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                1541 ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                         TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                          TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                             CCCACAACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                                                                   TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTTGAAAGGTC
                                                                                                                                                                                                                                       GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                         ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTTTATGT
                                                                                                                                                                                                                                                                                                                                             CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT
                                                                                                                                                                                                                                                                                                                                                           CTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAAACGAAACGGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER: US/10/137,036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: PETERA, Stanjan
APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Bagleton, Clare
APPLICANT: Bagleton, Clare
APPLICANT: Bagleton, Clare
APPLICANT: Gagleton, Clare
APPLICANT: Wood, Marion
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Compositions of Gene Expression
FILE REFERENCE: 11000.1036c4
CURRENT APPLICATION NUMBER: US/10/927,641
CURRENT FILING DATE: 2004-08-27
PRIOR APPLICATION NUMBER: PCT/NZ 01/00115
PRIOR PILING DATE: 2000-01-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
PRIOR APPLICATION NUMBER: U.S. No. 09/276,599
PRIOR APPLICATION NUMBER: U.S. No. 09/276,599
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 60
LENGTH: 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 60, Application US/10927641 Publication No. US20050244968A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAACAAAAAAAA 3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAACAAAAAAAAA 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 6
US-10-927-641-60
                           2535
                                                   1601
                                                                                                      1991
                                                                                                                                                        1721
                                                                                                                                                                                                                                                                                                                                                                                                2955
                                                                             2595
                                                                                                                                 2655
                                                                                                                                                                                  2715
                                                                                                                                                                                                            1781
                                                                                                                                                                                                                                      2775
                                                                                                                                                                                                                                                                1841
                                                                                                                                                                                                                                                                                         2835
                                                                                                                                                                                                                                                                                                                   1901
                                                                                                                                                                                                                                                                                                                                             2895
                                                                                                                                                                                                                                                                                                                                                                      1961
                                                                                                                                                                                                                                                                                                                                                                                                                        2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                   3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2081
                                                   셤
                                                                                               g
                                                                                                                                                       윱
                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                         Š
                                                                          ò
                                                                                                                              ઠે
                                                                                                                                                                                 ò
                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
1038
                                                                                                                                1098
                                                                                                                                                                                                  1158
                                                                                                                                                                                                                                                                     1218
                                                                                                                                                                                                                                                                                                                                     1278
                                                                                                                                                                                                                                                                                                                                                                                                     1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   941 cescrecresceaecracrecerscreaesrecrescerececeses con cescreces con 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1935 GTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGG 1994
                                                                                                 100
                                                                                                                                                                 160
                                                                                                                                                                                                                                                                                                    280
                                                                                                                                                                                                                                                                                                                                                                    340
                                                                                                                                                                                                                                                                                                                                                                                                                                       400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 940
                                                                                                                                                                                                                                                                                        161 GTATGATCTTGGAGTTGTTGGGAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                      281 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1395 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1635 TCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 881 GTCGCGGCCCAGCTCCCCACACCCCGAGGCACCCGTCATCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAG
                                                                  979 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                     CTGAGCCATTTAATTCGAGACACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                  1039 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                  GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                   AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                       ATCATCACCAGATCGGCCAGTAAGGGTAATATTAACTAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                     AACTCCGTATTTCTCTCCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                          341 AACTCCGTATTTCTCTCACTTCCATAACCCCTGATTAATTTGGTGGGGAAAGCGACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1455 ACATATTGGTGTGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1515 TATCGAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            701 reaccegarcegagacecagargacecegaececaagreregaegaegaegegaeceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1755 ATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGCGCGCGTTCCTCCACGGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1815 ATCGCGGCACAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTC
                                  Gaps
 Length 2096;
                                  4.
                                 11; Indels
 DB 10;
Score 2020.4;
Pred. No. 0;
0; Mismatches
Query Match
Best Local Similarity 99.3%;
Matches 2041; Conservative
                                                                                                                                                                                                                                                                                                      221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1575
                                                                                                                                                                                                                                                                      1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1875
                                                                                                                                                                                                  1099
                                                                                                                                                                                                                                                                                                                                       1219
                                                                                                                                                                                                                                                                                                                                                                                                       1279
                                                                                                   41
                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              641
```

```
AGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTACGGGATGACCGCGTTCGAGTATCATGCCACCGGACCCGCGATTCAACAAGATCTTTA 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rggaaagcrggrarraccrgaaagargcggrccrrgaaggcggaarcccarrcaacaagg 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGAGGGAACCTTCGCCATGCAGGTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1741 AGGCCGCCATCGACATCGACCTCCTCGAGATCATGGCCAAGGACGGCCGGGCGCGTTCC 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCGACCGGATCTTCCGGCTGCTGGCTACTCCGTGCTCACGTGCACCTCCGGGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1621 AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
                                                                                                          GENERAL INFORMATION:
APPLICANT: Blokeberg, Leonard N.
APPLICANT: Blokeberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Medification of Plant Lignin Content
TITLE OF INVENTION: Medification of Plant Lignin Content
TITLE OF INVENTION: Medification of Plant Lignin Content
FILING DATE: 1000-1003c5
CURRENT APPLICATION NUMBER: US 08/975,316
PRIOR PILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR PILING DATE: 2000-07-12
NUMBER OF SEQ ID NOS: 407
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1429.6;
Pred. No. 0;
0; Mismatches
                                                                        ; Sequence 107, Application US/10174693; Publication No. US20030131373A1; GENERAL INFORMATION:
2081 CGAACAAAAAAAAA 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 47.2%;
Best Local Similarity 99.0%;
Matches 1449; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2715 TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTC 2774
1781 TGAAGACCGCTTGATCTGCTCCTCTGTGGTGTTCATGGTTCTTGGATTTGAAAGGTC 1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC 2714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTCATGAAGTGGATATGCCATGACTGGACGACATTGCGCGAAGTTCCTCAAGA 2474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2354
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2055 TACCTGANAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACC 2114
                                                                                                                                                                                                        1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acaataagaagggactgtatgatggcgcaagtggaagttacaagatttgttgttatgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTECTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCACAACCCAGGGGGGAAAGAGGAGGACACAGAAGGAGTTCGAGGCCATTGGCCAAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                               GATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTTC
                                                                                                                                                                                                                                                                                                                                  2295 TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                           TICCIGGIGICAAGCACGICGAAGCGACAIGIICGICAGCGIICCAAAGGGAGAIGCCA
                                                      GTCTCCATCGCCGCACTCAACTTGAACCAGGACAAAATCCTCATGGAAAGCTGGTAT
                                                                        GCGTTCGAGTATCATGGCACCGGCGATTCAACAAGATCTTTAACCGGGGAATGTCT
      CGAACAAAAAAAAA 3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                       2355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2415
                                                                                                                                                                                                                                                            2175
                                                                                                                                                                                                                                                                                             1241
                                                                                                                                                                                                                                                                                                                             2235
                                                                                                                                                                                                                                                                                                                                                           1301
                                                                                                1001
                                                                                                                                                                                               2115
                                                                   1995
                                   1001
```

8 &

6 B 6 B 6

요 상 원

8 8

ል ይ

6 6 6 6 6

8 8

ò

8 8

8 6 8 6

8 6 8

셤

ð

a

ઠે

셤

ò

a ò g 8 g ઠે 중 음

δ

```
61 CGAATTTTCTCTTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 AAGGGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 ATCATCACCAGATCGGCCAGTAAAGGGTAATATTAAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1279 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1455 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1039 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATCGAACCTCCACCACATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATCGAACCTCCACCATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
     ATTLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Modification of Gene Expression FILE REFERENCE: 11000.103664

FILLE REFERENCE: 11000.103664

CURRENT APPLICATION NUMBER: US.10/137,036

CURRENT FILING DATE: 2002-04-30

PRIOR FILING DATE: 2002-04-30

PRIOR FILING DATE: 2000-11-28

PRIOR FILING DATE: 2000-11-28

PRIOR FILING DATE: 2000-11-28

PRIOR FILING DATE: 2000-06-20

PRIOR PILING DATE: 2000-06-20

PRIOR FILING DATE: 2000-06-20

PRIOR FILING DATE: 2000-06-20

PRIOR FILING DATE: 2000-06-20

PRIOR FILING DATE: 1999-07-30

PRIOR FILING DATE: 1999-07-30

PRIOR FILING DATE: 1999-03-25

NUMBER OF SEQ ID NOS: 143

SEQ ID NO 12

LENGTH: 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 638.2; DB 6;
Pred. No. 4.8e-185;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 98.9%;
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Eucalyptus grandis
US-10-137-036-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                2339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2639
                                                                                                                                                                                                                                     2399
                                                                                                                                                                                                                                                                                                        2459
                                                                                                                                                                                                                                                                                                                                                                           2519
                                                                                                                                                                                                                                                                                                                                                                                                                                             2579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2819
                                                                                                                                720
                                                                                                                                                                                                                                                                                                                                          900
                                                                                                                                                                                                                                                                                                                                                                                                             960
                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                       840
                               GCTTCGAGGCCTCGAGACCGTGGTCGATGTCGAAGGGGGGCACTGGGGCCGTGCTCAGCA
                                                                                                                                                                                    AAGACGCTCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCACGTTC
                                                                                                                                                                                                                                                                                                                            CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGGACGACCATTGCC
                                                                                                                                                                                                                                                                                                                                                                                             CGAAGTICCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCGAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1381 AACGAAACGGCGTATATGGATGTGCCTGAATGATGAAATTGTGATATTCTGTCTTCTTT
CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTTTA
                                                                                                  GCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCA
                                                                                                                                                                    TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                                                                                                                                                                                     AAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                                                                                        CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG
                                                                                                                                                                                                                                                                                                                                                                           CGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATGCTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGCGTACTCCCTGTGCTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTGCATCATGTTGGCCCACAACCCAGGCGGAAAGAGAGACACACAGAAGGAGTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATTGGCCAAAAGGGGCCGGATTTCAAGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 carrideccaaadedeccedarrircaedecrrccaagrcarerecrececerrrceecacre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGICATGGAGTICCTGAAGACCGCTTGAICTGCTCCTCTGTGGTGAIGTICATGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1141 ACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGTTCATGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITGITGITITIATGICIATAAAGITITIGAGICTICIGCATACTGATITICACAGAATGIGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCAGTAAATCACTTCGAACAAAA 3023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 12, Application US/10137036
Publication No. US20030101478A1
GENERAL INFORMATION:
APPLICANT: Perera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Lasham, Annette
APPLICANT: Lasham, Annette
APPLICANT: Wood, Marion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 8
US-10-137-036-12
                                                                 601
                                                                                                                                661
                                                                                                                                                                                                                                                                                                        2400
                                                                                                                                                                                                                                                                                                                                                                           2460
                                                                                                                                                                                                                                                                                                                                                                                                                                             2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3000
                               2161
                                                                                                 2221
                                                                                                                                                                    2281
                                                                                                                                                                                                    721
                                                                                                                                                                                                                                     2340
                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                             901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1441
```

g ò a ઠે 셤 ò 셤 δ 셤 ò a ઠે g ò 셤

1038

9

1098

120

1158

1218

1278

240

1338

360

300

1394

420

1454

480

1514

540

1574

600

1634

540

```
1039 CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATCGAACCTCCACCACATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                       ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Bagleton, Clare
APPLICANT: Lagaleton, Clare
APPLICANT: Lagaleton, Annette
APPLICANT: Hood, Marion
APPLICANT: Wood, Marion
APPLICANT: ON WOOD, 103664
CURRENT FILING DATE: 2002-04-30
PRIOR FILING DATE: 2000-11-28
PRIOR FILING DATE: 2000-11-28
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 1999-07-25
PRIOR FILING DATE: 1999-07-25
PRIOR FILING DATE: 1999-07-25
PRIOR FILING DATE: 1999-07-25
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 1999-07-25
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 1999-07-25
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 1999-07-25
PRIOR FILING DATE: 1999-07-25
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 1999-07-25
                                                                      Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
21.1%; Score 638.2; DB 10;
Best Local Similarity 98.9%; Pred. No. 4.8e-185;
Matches 654; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 12, Application US/10927641 Publication No. US20050244968A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Eucalyptus grandis
US-10-927-641-12
                                                                                                                                                                                                                                                                                                                                                                                            T 1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -4
                                                                                                                                                                                                                                                                                                                                                                                            1635
                                                                                                                                                                                                                          1515
                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                           1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                            셤
                                                                                                                                                                                                             B &
                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                        8 8
                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1159 AAGGCCCCAACCCAAGTTGCAAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACAAATAGCTCTTGTACCGGG 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTCCGTATTTCTCTCCATCCCTCTGATTAATTTGGTGGGAAAAGCCACAGGC 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1099 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCTCAGGGAAATT 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               979 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                               NESULY 9

US-10-702-319A-12

Sequence 12, Application US/10702319A

Publication No. US20050026162A1

GENERAL INFORMATION:
APPLICANT: Rece, Stephen
APPLICANT: Rece, Stephen
APPLICANT: Regleton, Clare, Clephen
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Composition of Gene Expression
FILE REFERENCE: 11000.1036c5
CURRENT APPLICATION NUMBER: US. No. 10/291,447

PRIOR FILING DATE: 2003-11-06
PRIOR APPLICATION NUMBER: U.S. No. 10/291,447

PRIOR FILING DATE: 2002-11-08

PRIOR FILING DATE: 2002-11-08

PRIOR FILING DATE: 2002-04-30

PRIOR FILING DATE: 2002-04-30

PRIOR FILING DATE: 2000-01-24

PRIOR FILING DATE: 2000-01-24

PRIOR FILING DATE: 2000-01-24

PRIOR FILING DATE: 2000-02-24

PRIOR FILING DATE: 2000-02-24

PRIOR FILING DATE: 2000-02-24

PRIOR FILING DATE: 2000-02-24

PRIOR FILING DATE: 1999-03-25

NUMBER OF SEQ ID NOS: 129

SEQ ID NO 12

LENGTH: 661

TAYDE: DATE
LENGTH: 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
21.1%; Score 638.2; DB 9;
Best Local Similarity 98.9%; Pred. No. 4.8e-185;
Matches 654; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eucalyptus grandis
                                                       1635 T 1635
                                                                                            661 T 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-702-319A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                      엄
                                                           ò
```

1038

09

ä

Gaps

4;

1707 CTGGCGAGGCCTCCGTGCTCCCAAAGGCCGCCATCGAGATCGACCTCCTC 1766	AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAGGTCGAGCGGCTC	2007 GCACTCTGATGATGAACCAGGACAAATCCTCATGGAAAGCTGGTATTACTGGAAGGAT 2066 440 CCTCTCTGTCTCATGACCAGGACACGTCCTCATGGAAAGCTGGTATTACTTGAAAGAT 2066 2067 GCGGTCCTTGAAGGCGGAATCCCATTCAACAGGCGTACGGGATGACGCGTTCGAGTAT 499 500 GCAATTCTTGATGGAGGAATCCATTTAACAAGGCCTATGGGATGACTGCATTTGAATAT 559 2127 CATGGCACCGACGATTCAACAAGATCCTTTAACCGGGGAATGTCTGATCATCCACTCCACC 2186	560 CATGGCACGATCCAAGATCTTCAACAAGGGTCTTCAACAAGGGATGTCTGACCACTCTACC 619 2187 ATTACTATGAAGAAGATCTTGAAGAGCTTCGAGGGCCTCGAGACCGTGGTC 2246		920 GCGTTGCCGGAAAACGGCAAGGTGATACTTGTTGAGTGCATTCTTCCCGTGGCCTCCTGAC 979 2546 ACGAGCCTAGCGACCAAGAATGTGATCCACACCATCATCTTGCCCTCCTGAC 979 2546 ACGAGCCTAGCGACCAAGAGAGTCCACACTCATCATGTTGGCCCACAACCCA 2605 980 ACAAGCCTTGCCACAAGAGAGTCGTGCACGTTGATGTCATCATGCTGGCGCACAACCCC 1039 2606 GGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGCCGGATTTCAG 2665 1040 GGTGGGAAAGAGACCCGAGAGGAATTTGAGGCCTTAGCTAAGGGGCTGGCT	1100 GGTTTGAAGTAATGTGCTGTGCATTCAACACACATGAATTCCGCAAGAAGGCC 1159 2726 TGA 2728 1160 TAA 1162
8 6 6 6 6	6 6 6 6	6 6 6 6	8 6 8 6 8	8 8 8 8 8 8	8 8 8 8 8	9 & 9 9
1099 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 121 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 1159 AAGGCGCCAACCCAGATTGCAAAGAGCACAAGAGAGAAATT 181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAGAGAGCACGACCCAACCTTTCCTTAACAAAGAGCACGACCGAC	OY 1279 ACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACC 1338 301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACC 1338 0y 1339 AACCCACAAAAGGTCAGATGTCATCCACGAGAGAGAGAGA		1575 CTGCTTTCCTTTGCTCGAGGGGAGGAGGAGAGAGAGAGAG	RESULT 11 US-09-947-027-5 is Sequence 5, Application US/09947027 is Patent No. US20020124281A1 is GENERAL INFORMATION: is APPLICANT: Chiang, Vincent Lee C. is APPLICANT: Li, Laigeng if TILE OF INVENTION: METHODS FOR SIMULTANEOUS CONTROL OF LIGNIN CONTENT AND COMPOSITIC if TILE OF INVENTION: CELLULOSE CONTENT IN PLANTS if TILE OF INVENTION: CELLULOSE CONTENT IN PLANTS if FILE REFERENCE: 066040-9718 if CURRENT APPLICATION NUMBER: US/09/947,027 if CURRENT APPLICATION NUMBER: 0500-09-05 if PRIOR PILING DATE: 2000-09-05	no numb	Ouery Match Vouery Match Vouery Matches Similarity 74.5%; Pred. No. 1.4e-182; Matches 807; Conservative 0; Mismatches 275; Indels 1; Gaps 1; Oy 1647 GAGACCCAGATGACCCCGACCCAAGTCTCGGAGGAGACGAAACCTCTTCGCCATGCAG 1706 Db 80 GAAACTCAGATGACTCCAACTCAGGTATCAGAAGAGGCAACCTCTTTGCCATGCAG 139

```
ORGANISM: aspen populus tremuloides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2726 TGA 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1160 TAA 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 1503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                        2606
                                                                                                                                                                                                                                                                                                                                                                                                                      2666
                                                                                                                                                           2426
                                                                                                                                                                                                                                                                                                                         980
089
                                                              740
                                                                                                                                                                                                                            2486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                       g
                                                                                                                                                                                                                            ó
                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                             8 8 8
                      ∂
                                                      g
      Sequence 5, Application US/10091009
; Sequence 5, Application US/20020138870A1
; Publication No. US20020138870A1
; GENERAL INFORMATION:
    APPLICANT: Chiang, Vincent Lee C.
    APPLICANT: Li, Laigeng
    TITLE OF INVENTION: COMPOSITION, AND
    TITLE OF INVENTION NUMBER: US/10/091,009
    CURRENT FILING DATE: 2001-09-05
    PRIOR PELICATION NUMBER: 60/230,086
    PRIOR PELICATION NUMBER: 60/230,086
    PRIOR PELICATION NUMBER: 60/230,086
    NUMBER OF SEQ ID NOS: 14
    SOFTWARE: PatentIn version 3.0
    SEQ ID NOS: 14
    SOFTWARE: PatentIn version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTACTATGAAGAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2007 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT 2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTACTCCGTGCTCGACCTCCGCGACCTCCCCGATGGCAAGGTCGAGGCGCTC 1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CIGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               440 CCTCTCTGTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGAT 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80 GAAACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGCACACCTCTTGCCATGCAA 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGGGACCGACCCGCGGATTCAACAAGATCTTTAACCGGGGAATGTCTCATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cardecacedarccaadarrcaacarcrrcaacaadggaardrcrdaccacrcracc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   320 AGCTACTCCATTCTTACTGCTCTCTCAAAGATCTTCCTGATGGGAAGGTTGAGAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1647 GAGACCCAGAIGACCCCGACCCAAGICICGGACGACGAGGCGAACCICIICGCCAIGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1767 GAGATCATGGCCCAAGGACGGCCCGCGCGTTCCTCCCACGGGGAAATCGCGGCCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAATCATGGCTAAAGCTGGCCTGGTGCTTTCTTGTCCACATCTGAGATAGCTTCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCCCGACCCAGAACCCCGAAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1947 TACGGCTTAGCGCCCGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           380 rargacicicististaranticitas caragargacagagargas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1503;
                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_feature
OTHER INFORMATION: AldOMT; GenBank accession number: X62096
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 631; DB 6; Length 15
Pred. No. 1.4e-182;
0; Mismatches 275; Indels
                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: aspen populus tremuloides
                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 20.8%;
Best Local Similarity 74.5%;
Matches 807; Conservative (
                                                                                                                                                                                                                                                                                                                         LENGTH: 1503
                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-091-009-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
Sequence 5, Application US/11057518;
Sequence 5, Application US/11057518;
Publication No. US20050166283A1
GENERAL INFORMATION:
APPLICANT: Chiang, Vincent Lee C.
APPLICANT: Chiang, Vincent Lee C.
TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS
TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS
FILE REPERENCE: 066040-9718
CURRENT APPLICATION NUMBER: US/11/057,518
CURRENT APPLICATION NUMBER: US/09/947,027
FRIOR PILING DATE: 2001-09-05
FRIOR FILING DATE: 2001-09-05
FRIOR FILING DATE: 2000-09-05
NUMBER OF SEQ ID NOS: 14
SOFTWARE: Patentin version 3.0
SEQ ID NO 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1707 CTGGCGAGCGCCTCCGTCCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAAGCCTIGCCACCAAGGGAGTCGTGATGTGATGTCATGCTGGGGGCACAACCCC 1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCGGGAAAAAAAAAAAAAAAAAAAAAATTCGAGGCATTGGCCAAAAGGGGCCGGATTTCAG 2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1040 GGTGGGAAAGAGAGGAAGGAATTTGAGGGCTTAGCTAAGGGAGCTGGCTTCCAA 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2546 ACGAGCCTAGCGACCAAGAATGTGATCCACTGGACTGCATGATGTTGGCCCACAAGCCA 2605
                                                                                                                                                                                                                                                                                                                                                                                           920 GCGTTGCCGGGAAACGCCAAGGTGATACTTGTTGAGTGCATTCTTCCCGTGGCTCCTGAC 979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1647 GAGACCCAGATGACCCCGAAGTCTCGGACGACGAGGCGAAGCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gecrrecaagreargregegerrrregegeacreacereargaserregaserreger
                                                                                                                                                                                                                                                                                            TGGATATGCCATGACTGGAGTGACGACATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                      2366 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGGATGCCATTTTCATGAAG
                                                                                                                                                                                                                    800 gadcardirddrddcddddardirindirakthacharachaadcadardccariricaidaad
2307 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTC
                           .,
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAMEN KEY: misc_feature
OTHER INCRMATION: AldOMT; GenBank accession number:
US-11-057-518-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
20.8%; Score 631; DB 13;
Best Local Similarity 74.5%; Pred. No. 1.4e-182;
Matches 807; Conservative 0; Mismatches 275;
```

```
1647
                                                                                                                                                                                                                                                                                    1707
                                                                                                                                                                                                                                                                                                      653
                                                                                                                                                                                                                                                                                                                         1767
                                                                                                                                                                                                                                                                                                                                           713
                                                                                                                                                                                                                                                                                                                                                             1827
                                                                                                                                                                                                                                                                                                                                                                                773
                                                                                                                                                                                                                                                                                                                                                                                                  1887
                                                                                                                                                                                                                                                                                                                                                                                                                    833
                                                                                                                                                                                                                                                                                                                                                                                                                                       1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                         893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2247
                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                ે
                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 %
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                              &
                                                                                                                                                                                                                                                                                                                       8
                                                                                                      1946
                                                                                                                                           2006
                                                                                                                                                                                2066
                                                                                                                                                                                                                                                        2186
                                                                                                                                                                                                                                                                                              2246
                                                                                                                                                                                                                   2126
                                                                                                                                                                                                                                                                                                                                  GATGTCGGAGGCGCCACTGGGGCCGTGCTCAGCATGGTCGTTGCCAAATACCCATCAATG 2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC 2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGTTGGCCCCACAACCCA 2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     439
                                                                                                                                                                                                                                                                           619
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGATATGCCATGATGGAGGGACGCCCACTGCTTAAAATTCTTGAAGAATTGCTATGGAC 919
                                                                                                                                                                                                                                                                                                                                                   GATGTTGGTGGTGGGACTGGAGCCGTCGTTAACACCATCGTCTCTAAATACCCTTCAATC 739
                                                                                                                                                                                                                                                                                                                                                                                800 GAGCATGTTGGTGGCGACATGTTTGTTAGTGTGCCCCAAAGCAGATGCCGTTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGATCATGGCCAAGGACGGCCCGGCGCGTTCCTCCTCCACGGGGAAATCGCGGCACAG
                                               GAAATCATGGCTAAAGCTGGCCCTGGTGCTTTCTTGTCCACATCTGAGATAGCTTCTCAC
                                                                  CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                  AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGGCGGCTC
                                                                                                                                           TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                      GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                          CCTCTCTGTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGAT
                                                                                                                                                                                                                    GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                        CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                   CATGGCACGGATCCAAGATTCAACAAGGTCTTCAACAAGGGAATGTCTGACCACTCTACC
                                                                                                                                                                                                                                                                                              ATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                               ATTACCATGAAGAAGATTCTTGAGACCTACAAAGGCTTTGAAGGCCTCACGTCCTTGGTG
                                                                                                                                                                                                                                                                                                                                                                       AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                           AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGTTGCCGGAAAACGCCAAGGTGATACTTGATTGAGTGCATTCTTCCCGTGGCTCCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCGGGAAAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTTCCAAGTCATGTGCTGCCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                                                                                                                                                                                                               1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGA 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAA
                                              200
                                                                                                                         320
                                                                                                                                                             380
                                                                                                                                                                                                  440
                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                   680
                                                                                                                                                                                                                                                                                                                                                                                       740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1100
           140
                                                                 1827
                                                                                   260
                                                                                                     1887
                                                                                                                                          1947
                                                                                                                                                                               2007
                                                                                                                                                                                                                   2067
                                                                                                                                                                                                                                                                                              2187
                                                                                                                                                                                                                                                                                                               620
                                                                                                                                                                                                                                                                                                                                                                     2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2546
                             1767
                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                        2127
                                                                                                                                                                                                                                                                                                                                  2247
                                                                                                                                                                                                                                                                                                                                                                                                           2366
                                                                                                                                                                                                                                                                                                                                                                                                                                                2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2726
                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                           8 6 8
                                                                                                                                                                                                                                                                                                                                                                                      8 & 8
                                             8 8 8
                                                                                                     ઠે
                                                                                                                  염장
                                                                                                                                                      a
                                                                                                                                                                             Š
                                                                                                                                                                                           요 당
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                            8
```

14

Sequence 20299, Application US/10424599
Publication No. US20040031072A1
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: La Rosa Thomas J
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
TITLE OF INVENTION NUMBER: US/10/424,599
CURRENT APPLICATION NUMBER: US/203-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 20299
LENGTH: 2037 2186 1826 CTCCCGACCCAGAAACCCCGAGGCACGTCATGCTCGACCGGATCTTCCGGCTGCTGGC 1886 1946 2006 2066 CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1766 2246 GATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG 2306 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2365 AAGGCCATTAATTTTGATTTGCCCCCATGTCATTGAAGATGCCCCATCTTATCCAGGGGTG 1312 652 772 832 892 rangencirceccereinecraagiacinegicaggaacgaagangerenecreciner 952 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC CTAGCCAGTGCCTCAGTACTCCCTATGGTTCTCAAATCAGCTCTTGAGCTTGATCTGTTG GAGATCATGGCCAAGGACGGGCCGGCGCGTTCCTCTCTCCACGGGGGAAATCGCGGCACAG AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCGCTC GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT CATGGAACGGATCCAAGGTTTAAACAAGGTTTTCAACAAGGGGATGGCTGATCACTCTACC ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC GAAATCATAGCCAAGGCTGGCCCTGGTGTTCACCTTTCCCCCTCCGACATTGCTTCTCGG GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC Gaps 1; Length 2037; Indels ; OTHER INFORMATION: Clone ID: PAT_MRT3847_118334C.1 US-10-424-599-20299 20.2%; Score 613.4; DB 8; 72.5%; Pred. No. 4.7e-177; 0; Mismatches 306; Best Local Similarity 72.5 Matches 808; Conservative щаX TYPE: DNA
ORGANISM: Glycine
FEATURE: 2307 1253 ઠ 셤

g

g &

ઠ a

6 8 6

g Š 셤 ò 셤

```
2721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2421
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          782
                                                                                                                                                                                                                                                                                                                                                                 2242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         722
                                                                          422
                                                                                                                                                                                                2122
                                                                                                                                                                                                                                                                                   2182
                                                                                                                                                                                                                                                                                                                        602
                                                                                                                                                                                                                                                                                                                                                                                                           662
                                                                                                                   2062
                                                                                                                                                        482
                                                                                                                                                                                                                                           542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋧
                                                                                                                                                                                                                                                                                                                                                      8 B 8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                   8 8
                                                                                                        8 B 8
                                                                                                                                                                                                                                QQ
                     8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1942 GGCTCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Agerregea Agerecerrecerrece carregreers and a servent and 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACAGCITCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGGATCTTCCGGCTGC 1881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            regectacitacitecerecricacerecerecerecerececeareceare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 302 radcchdcracchachachachrachcrachdagaachrachagadadadadada 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                2665
                                                                                                                                                                                                                                                                                                                                                      2605
                                                                                2485
                                                                                                                                                                   2545
                                                                                                                                                                                                        1492
                                                                                                          TCGAGATCATGGCCAAG---GACGGGCCCGGGCGCGTTCCTCCCACGGGGAAATCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1645 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGGGGAACCTTTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cagagarccagararcccaccacrecresacgagagccaaccrerrescarge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                TGGATATGCCATGACTGAGGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                 GCGCTTCCCAACAATGGAAAAGGTGAATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC
                                                                                                                                                                                             2546 ACGAGCCTAGCGACCAAGAATGTGATCCAACATCGACTGCATCATGTTGGCCCACAACCCA
                                                                                                                                                                                                                                                                        1493 TCTAGCTTGGCCACAAAAGTGTGGTTCACATCGATGTGATGTTGGCTCATAATCCA
                                                                                                                                                                                                                                                                                                                                GECGGGAAAGAGAGACACAGAAGTTCGAGGCATTGGCCAAAGGGGGCCCGAATTTCAG
AAGCACGICGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 613; DB 8; Length 1486;
Pred. No. 5e-177;
0; Mismatches 280; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 11, Application US/10469993
Sequence 11, Application US/10469993
Publication No. US20040078847A1
GENERAL INFORMATION:
APPLICANT: Paldi, Nitzan
TITLE OF INVENTION:
FILE REFERENCE: 26678
CURRENT APPLICATION NUMBER: US/10/469,993
CURRENT FILING DATE: 2003-09-16
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin version 3.1
SEQ ID NO 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT 2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1673 rakgrictitggcgrgdarrcararcakagrigcar 1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 20.2%;
Best Local Similarity 73.9%;
Matches 804; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Clarkia breweri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
US-10-469-993-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-469-993-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                     1433 (
                                                                                                                                                                                                                                                                                                                                                                                       1553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2726
                                                                                                                                                                              2486
                                                                                                                                                                                                                                                                                                                                                2606
                                                                                                                                                                                                                                                                                                                                                                                                                                2666
                                                                                                                                       1373
                                                        1313
                                                                                                2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
```

```
2660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2481 ACGATGCGCTTCCCAACAAGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC 2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        961
                                                                                                                                                                                                                                                                                                                                                                                                   2181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2061
                                                                                                                                                                                                                                                         2121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2541 CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAGGGGTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               regregargicegasegeesegregecegrecreacarearegragecaaaracecaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGTCAAGGACGTCGACGACGACGATGTTCGAAGGGGAAGATGCCATTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCG
                                                                                                                                                                                                                                                                                                   AGTATCATGGCACCGACCGCGATTCAACAAGATCTTAACCGGGGAATGTCTGATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                             162 GGCTGTACGGCCTCGCCCCTGTCTGCAAGAACGAGGATGAAGATTTCTC
                                                                                                                                                                 inii 1111 111 111 indicationalisii inii 111 111 111 indicationalisii indic
                                                                                                       2002 TCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search completed: November 1, 2006, 14:26:09 Job time: 3878.36 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGCTTGA 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGCGTAA 1149
```

```
ACGAGGGAACCTCTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1621 AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 107, App
Sequence 7471, Ap
Sequence 4777, App
Sequence 22559, A
Sequence 3948, Ap
Sequence 3626, A
Sequence 14143, A
Sequence 14143, A
Sequence 14143, A
Sequence 173, Appl
Sequence 1, Appli
Sequence 24, Appl
Sequence 24, Appl
Sequence 24, Appl
Sequence 24, Appl
Sequence 106, Appl
Sequence 17322, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Published Applications NA New:*

1: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US09_NEW_PUB.seq:*
2: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US06_NEW_PUB.seq:*
3: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US08_NEW_PUB.seq:*
4: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US08_NEW_PUB.seq:*
5: /EMC_Celerra_SIDS3/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
6: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
7: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
8: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
9: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
10: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78, Appl
14143, A
14143, A
4559, Ap
1, Appli
24, Appl
106, App
17322, A
80, Appl
17322, A
80, Appl
17322, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6368, Ap
51, Appl
                                                                                                                                          November 1, 2006, 11:48:44; Search time 657.143 Seconds (without alignments) 8946.617 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                  1 cacctgttcagtttgattcc.....acttcgaacaaaaaaaa 3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
GenCore version 5.1.9
(c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4922752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-11-397-533-107

US-11-216-545-7471

US-11-056-355B-22559

US-10-953-349-3948

US-11-056-355B-2656

US-11-056-355B-3666

US-11-056-355B-3666

US-10-449-902-1413

US-11-056-355B-5836

US-10-449-902-1413

US-11-056-355B-5315

US-11-056-355B-5315

US-11-216-545-7470

US-11-229-086-80

US-11-229-086-80

US-11-229-086-80

US-11-229-086-80

US-11-299-3149-20948

US-10-953-349-13681

US-11-106-355B-26750

US-11-106-355B-26750

US-11-106-355B-26750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                      2461376 seqs, 970166171 residues
                                                                                                                                                                                                                                       US-10-702-319A-113_COPY_41_3070
3030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                 nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1630
1266
1266
1394
1394
1394
1394
11222
11222
11222
1219
1531
401
1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                       Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             %
Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1429.6
610.6
510.6
510.6
564.8
564.8
564.8
43.4
43.6
419.6
419.6
419.6
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
391.4
3
                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB E
Maximum DB E
                                                                                                 OM nucleic
                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     222
222
223
223
233
233
                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
```

Sequence 90878, A Sequence 94634, A Sequence 127, App Sequence 13, App Sequence 13, App Sequence 1089, App Sequence 19612, A Sequence 19612, A Sequence 191, App Sequence 191, App Sequence 1967, A Sequence 110529, Sequence 2065, App Sequence 2065, App Sequence 103360, Sequence 103360, Sequence 103360, Sequence 103360, Sequence 103360, Sequence 114599, Sequence 114599, Sequence 114599, Sequence 114599, Sequence 9614, App Sequence 114599, Sequence 114599, Sequence 114599, Sequence 9614, App Sequence 9614,	Content	Length 1630; Indels 1; Gaps 1;
146 9 US-11-056-355B-90878 146 9 US-11-37-55B-9634 146 6 US-11-37-533-127 146 9 US-11-576-533-127 146 9 US-11-056-355B-86015 139 6 US-10-649-902-4089 139 6 US-10-449-902-21780 130 6 US-10-449-902-21780 141 9 US-11-218-305-104 141 6 US-10-64-305-21780 141 6 US-11-232-018 141 6 US-11-37-533-191 141 6 US-11-37-533-191 141 6 US-11-38-9250 141 6 US-11-38-9250 141 6 US-11-38-105-358-10529 141 6 US-11-056-355B-10350 141 6 US-11-056-355B-10350 141 6 US-11-056-355B-10350 141 6 US-11-056-355B-10350	IGNMENTS 3 2 2 4 5 7 7 8 8 8 9 7 9 7 9 7 9 9 9 9 9 9 9	.2%; Score 1429.6; DB 7; .0%; Pred. No. 0; e 0; Mismatches 14; I
24 256.6 8.5 111. 255.6 8.5 111. 256.6 8.5 111. 27 250.2 8.3 111. 29 250.2 8.3 111. 29 250.2 8.3 113. 31 232.4 7.7 123. 31 232.4 7.7 123. 31 232.4 7.7 123. 32 229.2 7.6 100. 37 228.6 7.5 113. 42 204.2 6.7 1131. 44 204.2 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.7 1131. 45 202.6 6.	RESULT 1 US-11-397-533-107 Sequence 107, Application US/1139753; Publication No. US20060183895A1 Publication No. US20060183895A1 APPLICANT: Bloksberg, Leonard N. TITLE OF INVENTION: Madification of FILE REPERENCE: 11000.1036 CURRENT APPLICATION NUMBER: US 08/975 PRIOR FILING DATE: 1997-11-21 PRIOR FILING DATE: 1997-11-21 PRIOR FILING DATE: 1998-10-09 PRIOR PILING DATE: 1998-10-09 PRIOR PILING DATE: 1998-10-09 PRIOR PILING DATE: 1998-10-09 PRIOR PILING DATE: 1998-07-14 PRIOR PILING DATE: 1998-07-14 PRIOR PILING DATE: 1998-07-14 PRIOR PILING DATE: 2000-07-12 PRIOR PELING DATE: 1998-07-14 PRIOR PILING DATE: 2000-07-12 PRIOR PILING DATE: 1998-07-14 PRIOR PILING DATE: 2000-07-12 PRIOR PILING DATE: 2000-07-13 PRIOR PILING DATE: 2000-07-14 PRIOR PILING	Query Match Best Local Similarity 99 Matches 1449; Conservativ

8 8 8 8 8 8 8 8 8

OY 2820 TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA 2879 Db 1261 TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCCAAGTGGAAGTTACAAGA 1320 Db 1280 TTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTTTCACAGAATGTC 2939 Qy 2880 TTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTCACAGAATGTGT 1380 Db 1321 TTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTCACAGAATGTGT 1380 Qy 2940 AACGAAACGGCGTATATGGCTTGAGTGTGATATTCTGTCTTTTT 2999 Qy 3000 TTCAGTAATGGATGTGCCTGAATGATGGGAAATTTCTGTCTTCTTT 1440 Db 1381 AACGAAACGGCGTAATGGATGTGCCTGAATGATGTGATATTCTGTCTTCTTT 1440 Db 1441 TTCAGTAAATCACTTCGAACAAAA 3023 Qy 3000 TTCAGTAAATCACTTCGAACAAAA 1464	BESULT 16 456-741 WESTLATE 454-742 WESTLATE 454-742 WESTLATE 454-742 SEQUENCE ON DESCRIPTION TO THE PROPERTY INC. APPLICANT: NON-MEDITION TO THE PROPERTY INC. APPLICANT: Tac. Non-MEDITION TO THE PROPERTY INC. APPLICANT: Tac. Non-MEDITION TO THE PROPERTY INC. APPLICANT: Tac. Non-MEDITION TO THE TAC. APPLICANT: Tac. Non-MEDITION TO THE TAC. TITLE OF INVENTION: SINGLE SINGLE SINGLE STATES TO THE TAC. TITLE OF INVENTION: SINGLE SINGLE SINGLE STATES TO THE TAC. TITLE SINGLE SINGLE SINGLE SINGLE STATES TO THE TAC. TOTAL TAC. WINNERS OF SINGLE SINGL	Db 433 CTGCTCTTAACCTCATGAACCAGGACAAAGTCCTCATGGAAAGCTGGTACTAITTGAAAG 472
121 AGGAGGGAACCTCTTCGCCATGCAGCGAGCGCCTCCGTGCTCCCCATGGTCCTCA	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2760 TGGATTTGAAAGGTCGTCAAAGANSCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC 1260

셤 상 심 ò

```
1825 AGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGG 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCGATGGCAAGGTCGAGCGGC 1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG 2244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAAGGGATCAACTTCGACCGCCC-CAACGGATTGAAGACGCCCCACCCCTTCCTGGTG 2363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA 2423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG 2483
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1705 AGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCC 1764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGAGATCATGGCCAAGGACGGCCCGGCGCGTTCCTCCACGGGGGAAATCGCGGCAC 1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGATGTCGGAGGCGGCACTGGGGGCCGTGCTCAGCATGATCGTTGCCCAAATACCCATCAA 2304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TIAPAGGCATCAACTITGATCTCCCACATGTCATTGAAGATGCTCCTTCTCATCCTGGTA 805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Aactrocgaccaaaaaccorgaagorocggroargcrogaccgrarocrocrocrorrorra 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cercitacicesterraacerectecaaceraaacitriceereareerraacea 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAATCACCATGAAGAAGATCTTGAGACCTATAAGGGTTTTGAAGGATTGACTTCTTTGG 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  386 TTTACGGGCTTGGTCCGGTTTGCAAGTATTTGACCAAGAACGAAGATGGTGTTTCCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTGGATATGTCATGACTGGAGTGACATTGCGTGAAATTCTTGAAAAACTGCTACG
                                                                                                                                                                                                                                                                                                                                                                                          TTGAGATTATGGCCAAGAATGGTTCTCCCATGTCTCCTACC-----GAGATCGCTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCTCTTTGTCTTATGAACCAAGACAAGGTTCTCATGGAAAGCTGGTACCATTTGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Trearetrestrescarrestrestrestrestrearatisarretrestrestrestre
                                                                                                                                                                                                                                                                                                                                                                   1645 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   152 AACTAGCCAGTGCTTCCGTTCTTCCGATGGCTTTAAAATCCGCCTTAGAGCTTGACCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arccaarrcrrcarccarrccarrcaacaaccrrarcaarrcaarccarrcaacr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rrgagicarciricgaggagarargrirgraaggreficcraaaggreficarga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                              Length 1266;
                                                                                                                                                                                                                  Ceres CDNA ID no. 23371995
                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                          Query Match
18.7%; Score 566.4; DB 9;
Best Local Similarity 70.6%; Pred. No. 2e-153;
Matches 786; Conservative 0; Mismatches 321;
                                                                                                                             33790
                                                                                                                               е
В
                                            ю
10
                                                                                                                             H
                                                                                                                                                                                       LOCATION: (1). [(1266)
CTHER INFORMATION: Also known as US-11-174-3078-477
                                          G
                                                                                                                             CLONE
                                          CDNA
                      LOCATION: (1). (1266)
OTHER INFORMATION: Ceres
                                                            FEATURE:
NAME/KEY: misc_feature
LOCATION: (1). . . (1266)
OTHER INFORMATION: Ceres
                                                                                                                                               FEATURE:
NAME/KEY: misc_feature
    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  998
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                     용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: ALEXANDROV, Nickolai
APPLICANT: ALEXANDROV, Nickolai
APPLICANT: BROVER, Vyacheslav
ITILE OF INVENTION: UNCLEDIDE SEQUENCES AND POLYPEPTIDES ENCODED THEREBY
ITILE OF INVENTION: USEFUL FOR MODIFYING PLANT CHARACTERISTICS
ITILE OF INVENTION: USEFUL FOR MODIFYING PLANT CHARACTERISTICS
FILE REFERENCE: 2750-1601PUS2
CURRENT APPLICATION NUMBER: 60/593,671
PRIOR PILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2483
    2124
                                                                                     2184
                                                                                                                                                                       2244
                                                                                                                                                                                                                                                            2304
                                                                                                                                                                                                                                                                                                                                                                                                                                  2423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAG 2543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGCGGGAAAGAGGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTC 2663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGGCTTCCAAGTCATGTGCTGCGCCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCG 2723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGTTTCCGAGTCCTGTGCTTTCAATACCTACGTCATGGAGTTTCTCAAAAAGG 1152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAACC 2603
                                                                                                                           612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            852
                                                                                                                                                                                                                                                                                                  673 Trgargirderdeaddaacredadceiracreaacardarrercreaagrarceacra 732
                                                                                                                                                                                                                                                                                                                                                                                       733 TCAAGGGCATTAATTTTGATTTGCCCCATGTCATTGGAGATGCCCCATCTTATCCAGGAG 792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTGGATTTGCCACGATTGGAGTGATGAGCACTGCTTGAAGTTTTTGAAGAACTGCTATG 912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    913 AGGCACTTCCAGACAATGGGAAGGTAATTGTGGCAGAATGCATTCTTCCAGTGGCTCCAG 972
                                                                                                                                                                     CCATTACTATGAAGAAAATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG
                                                                                                                                                                                                CAATCACAATGAAGAAAATTCTTGAGACCTACACTGGCTTTGAGGGTCTTAAATCTCTGG
                                                                                                                                                                                                                                                            TCGATGTCGGAGGGGCCACTGGGGCCGTGCTCAGCATGGTCGTTGCCAAATACCCATCAA
                                                                                                                                                                                                                                                                                                                                             TGAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          regagearchecagacararchirereacherrecagascrearecratrirrarea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u> AGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG</u>
    ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                      Argergrecirga Aggesegra recarrita Acaa Agea rarga Argerge Cririca Ar
                                                                                  ATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                           553 Accardonacadarccaagorrraacaagorrrrcaacaagogargocroarcacrcca
                                                                                                                                                                                                                                                                                                                                                                                                                                TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGA 2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1153 TritaAGTricTringGcGrigarincaraAGTricarinigAGTrinigA 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 477, Application US/11174307B Publication No. US20060143729A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 3
US-11-174-3078-477
  2065
                                          493
                                                                                                                                                                                                                613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 853
                                                                                  2125
                                                                                                                                                                       2185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       973
                                                                                                                                                                                                                                                            2245
                                                                                                                                                                                                                                                                                                                                                                                                                                  2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2724
                                                                                                                                                                                                                                                                                                                                             2305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1093
                                                                                                                                                                                                8 % B
                                                                                                                                                                                                                                                                                                                                  8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 6 8 6
```

ઠે 8 8

음

유 ઠે 셤

Š

2004

151

211

445

2064

505

2184

925

2124

ò g ò 셤

ò 셤

g

셤 8

8

```
CAGGCGGGAAAGAGAACAACAAGAAGTTCGAAGGCATTGGCCAAAAGGGGCCGGATTTC 2663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1046 ccdgaddcaaaddaacgaacgadaaadadatttgaddcattadccaaagcarcadgcrtca 110s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2664 AgggcrrccaAgrcangsgcrgcgcrrrcggcacrccacgrcargaagrrcgraaAgaccg 2723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2544 ACAÇGAGÇÇTAGÇGAÇÇAAGAATGTGATÇÇACATÇGAÇÇATÇATÇATGTTGGÇÇÇAÇAAÇÇ 2603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2424 AGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG 2483
                                                                                                                                                                                                                                                                                       2184
                                                                                                                                                                                                                                                                                                                                                CCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGGCCTGG 2244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              925
                                                                                                                                                                         2064
                                                                                                                                                                                                                                2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         746 ITAAAGGCATCAACTITGATCTCCCACATGTCATTGAAGATGCTCCTTCTCATCCTGGTA 805
                                                                                                                 2004
AGCTCCCGACCAGAACCCCCAAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGGTGG 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2484 ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Agrcaciticcagaggaliggiaagigatatragcagagigtataciticcagagacaccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           986 Acrcaagcercreaaceaacaagragiceargresarrecarrargrideredeare
                                                                                                                                                                                                                                                                                                                                                                                                         TCGATGTCGGAGGCGGCACTGGGCCGTCAGCATCGTTGCCAAATACCCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                              686 TIGATGITGGTGGCATTGGTGCTACACTCAAAATGATTGTCTCCAAGTACCCTAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2364 TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  806 irgagcargirddagdagariaigirtgiaagrgiccciaaaggrgigigigi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rganagogarchactriconcoccc-cancedarranagacoccccacccrrccroside
                                                                                                                                                                                                                                                                                                                                                                   CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGGTGGTATTACCTGAAAG
                                                                                                                                                                                                ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                  2125 ATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                                                                                                          326 cercriacriccircriaaccriccaecceraachaachricceriaarecirteaacea
                                                          ccaectacticogrecicacerecacerecesacereces
                                                                                                                 1945 TCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGAGGACGCTCTCCATCG
                2724 CITGAICTGCICTCTGTGGTGAIGTICAIGGTI 2757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rciaaaacaaacaardirccraidaagardari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
US-10-953-349-3948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2305
                                                                                                                                                                                                                                                                                                                                                                                                                        2245
                                                                                                                                                                                                                                                                                                                                                               2185
                                                                                                                                                                                                                    446
                                                                                                                                                                                                                                               2065
                                                                                                                                                                                      2005
                                                                                                                                                                                                                                                                           206
                1825
                                            266
                                                                        1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                               8 8 8
                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                        ò
                                                                         8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1705 AGCTGGCGAGCGCCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACTCC 1764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGAGATCATGGCCAAAGGACGGGCGCGCTTCCTCCACGGGGGAAATCGCGGGCAC 1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             152 Aaciadecabrecricebrechiedarederriaaaareedeerraaacridaderre 211
                                                                                                                                                                                                                             1046 ccdsadschahdaacdahccahdahahdadrrehddcarrahdcarcadadscrica 1105
                                                                                                                                                                                                         Agggerrecaagreargrecrecgerrreggearcreaggreargrecreaagaeceg 2723
                                                                                         ACACGAGCCTAGCGAGCAAGAATGTGATCCACTGCATGATCATGTTGGCCCACAACC 2603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1645 ccgagacccaargaccccaacccaagrcrcgacgacgaggcgaaccrcrrrg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590FUS2
CURRENY APPLICATION NUMBER: US/11/056,355B
CURRENY FILING DATE: 2005-02-14
PRIOR APPLICATION NUMBER: 60/544,190
PRIOR APPLICATION NUMBER: 60/544,190
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 22559
                                                                                                                                                   CAGGCGGGAAAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTC
                                   ATGCCCTTCCCAACAATGCAAAAGGTCATTCCAAGAGTGCCTAACTCCCTGTGTACCCCAG
                                                       7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 566.4; DB 9; Length
Pred. No. 2e-153;
0; Mismatches 321; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ceres SEQ ID NO 14304148
SEQ ID NO 57313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (1)...(1266)
CTHER INFORMATION: Ottholog of Ceres SEQ ID NO 13598513
CTHER INFORMATION: as cited in SEQ ID NO 64102
US-11-056-3558-22559
                                                                                                                                                                                                                                                                      2724 CITGAICTGCICCICTGIGGIGAIGITCAIGGII 2757
                                                                                                                                                                                                                                                                                                rchaaaacaaacaahchrcchahdaagahdahh 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   no. 12338255
                                                                                                                                                                                                                                                                                                                                                                            Sequence 22559, Application US/11056355B publication No. US20060150283A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_feature
LOCATION: (1). [1266)
OTHER INFORMATION: Ceres Seq. ID no
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1). [1266)
OTHER INFORMATION: Ortholog of Cer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 18.7%;
Best Local Similarity 70.6%;
Matches 786; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                   US-11-056-355B-22559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    212
                                                                                                                                                                                                                                                                                                             1166
                                                                                                                                                                                                                        2664
                                                                                                                                                               2604
                                                                                                        2544
                                                                            926
                                                                                                                                     986
                                                  2484
```

g ò 셤 ઠે

```
WS-11-174-307B-2145

Sequence 2145, Application US/11174307B

Publication No. US20060143729A1

GENERAL INFORMATION:

APPLICANT: ALEXANDROV, Nickolai

APPLICANT: BROVER, Vyacheslav

TITLE OF INVENTION: USEFUL FOR MODIFYING PLANT CHARACTERISTICS

TITLE OF INVENTION: USEFUL FOR MODIFYING PLANT CHARACTERISTICS

TITLE OF INVENTION: USEFUL FOR MODIFYING PLANT CHARACTERISTICS

CURRENT APPLICATION NUMBER: 60/533, 671

PRIOR APPLICATION NUMBER: 60/533, 781

PRIOR PILING DATE: 2004-06-30

PRIOR FILING DATE: 2004-06-30

NUMBER FOR SEQ ID NOS: 5544

IENGTH: 1394
                                                                                                           CAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTC 2663
                                                                                                                                            1088 ccccancicaracianicaricariana de de la coccanida de la 1147
                                                                                                                                                                                                         1765 TCGAGATCATGGCCAAGGACGGGCCGGCGCGTTCCTCCTCCACGGGGAAATCGCGGGCAC 1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1825 AGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGG 1884
AGTCACTTCCAGAGGATGGAAAAGTGATATTAGCAGAGTGTATACTTCCAGAGACACCAG 1027
                                                                       1028 ACTCAAGCCTCTCAACCAACAAGTAGTCCATGTCGATTGCATTATGTTGGCTCACAATC 1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         254 Treascatratesceaasaarestrececarerecerace-----Gagarescructa 307
                                                                                                                                                                                    AGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1705 AGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCC
                                    ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGGTTGGCCCACCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1645 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       194 AACTAGCCAGTGCTTCTTCGATGGCTTTAAAATCGGCCTTAGAGCTTGACCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1394;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          no. 23370749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 564.8; DB 9;
Pred. No. 6.2e-153;
0; Mismatches 322;
                                                                                                                                                                                                                                                           2724 CTTGATCTGCTCTGTGGTGATGTTCATGGTT 2757
                                                                                                                                                                                                                                                                                            1208 TCTAAAAACAAACAATGTTCCTATGAAGATGATT 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ceres CDNA ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          no. 13491017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 253173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature
i. LOCATION: (1)...(1394)
i. OTHER INFORMATION: Also known as
US-11-174-307B-2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA 1D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: (1). (1394)
OTHER INFORMATION: Ceres CLONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18.6%;
70.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 70.5°
Matches 785, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (1). (1394)
OTHER INFORMATION: Ceres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY: misc_feature
                                      2544
                                                                                                             2604
                                                                                                                                                                                      2664
 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
                                                                   g
                                                                                                                                        셤
                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                          à
                                                                                                         ઠે
                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2483
                                                                                                                                                                                                                                                                                1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2184
                                                                                                                                                                                                                                                                                                                   193
                                                                                                                                                                                                                                                                                                                                                     AGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCC 1764
                                                                                                                                                                                                                                                                                                                                                                                                                              TCGAGATCATGGCCAAGGACGGGCCGGCGCGTTCCTCCACGGGGAAATCGCGGCAC 1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGG 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAA 2304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTTCCGACCAAAAATCCTGAAGCTCCGGTCATGCTCGACCGTATCCTCCGTCTTCTTA 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cercriacriccircriaaccriecrecaacciraaacririccesrearecerreaaceda 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCACGGGACTGACCCTAGATTCAACAAGGCTTTTAACAATGGAATGTCTAACCATTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAAAGGGATCAACTTCGACCGCCC-CAACGGATTGAAGACGCCCCCACCCTTCCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2484 ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAG
                                                                                                                                                                                                                                                                                1645 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                 134 cagadadacadarraacrodgracaadroaccgacgadgaagcroccrorrogccargo
                                                                                                                                                                                                                                                                                                                                                                                      194 AACTAGCCAGTGCTTCCGTTCTTCCGATGGCTTTAAAATCCGCCTTAGAGCTTGACCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rreagarraresceaagaarestrerecearsrereceaegarescruca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTACGGGCTTGGTCCCGATTTGCCAACTATTTGACCAAGAACGAAGATGGTGTTTCCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGCTCTTTGTCTTATGAACCAAGACAAGGTTCTCATGGAAAGCTGGTACCATTTGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        548 ATGCAATTCTTGATGGTGGGATTCCATTCAACAAGGCTTATGGAATGAGCGCGTTCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAATCACCATGAAGAAGATTCTTGAGACCTATAAGGGTTTTGAAGGATTGACTTCTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      traaaggcatcaacttrgarcrccacargrcarcgaagargcrccrrcrcarccrggra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2424 AGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTGGATATGTCATGACTGGGGGGGAGCATTGCGTGAAATTCTTGAAGAACTGCTACG
                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                     Length 1394;
                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                       Score 564.8; DB 6;
Pred. No. 6.2e-153;
0; Mismatches 322;
               CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SEQ ID NO 3948
LENGTH: 1394
                                                                                                                              ; TYPE: DNA
; ORGANISM: Arabidopsis thaliana
US-10-953-349-3948
                                                                                                                                                                                                       Query Match
Best Local Similarity 70.5%;
Matches 785; Conservative
   REFERENCE: 2750-1579PUS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 848
                                                                                                                                                                                                                                                                                                                                                       1705
                                                                                                                                                                                                                                                                                                                                                                                                                              1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           908
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
```

253

193

```
CAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAAGGGGCCGGATTTC 2663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2664 AGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCG 2723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGGCATCAAAGTIGICTGCGACGCTTTTGGTGTTAACCCTTATTGAGTTACTCAAGAAGC 1207
                                                                                                                                                                                                                                                                                                                                                                                                                                              1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCAAGGACGICGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA 2423
                                                                                                                                                                                                                                                                                                                                                                                     AGTGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG 2483
                                                                                                                                                                                                                                                                                                       TGAAAGGGATCAACTTCGACGGCCC-CAACGGATTGAAGACGCCCCACCCTTCCTGGTG 2363
                                                                                                                                                                                                                            CCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG 2244
                                                                                                                                                                                                                                                                   TCGATGTCGGAGGCGCCATGCCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAA 2304
                                                                                                                                                                                       2125 ATCATGGCACCGACCCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA 2184
                                                                                                                                                                                                                                                                                                                                                                                                         967
                                                                    2004
                                                                                                                                               AIGCGGICCITGAAGGCGGAAICCCAITCAACAAGGCGIACGGGAIGACCGCGTICGAGI 2124
                                                                                                                                                                                                         667
                                                                                                                                                                                                                                                                                                                        CCAGCTACTCCGTGCTCACGTGCACCTCCGCGATGGCAAGGTCGCGGC 1944
                                                                                                          CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG 2064
                                                                                                                            547
                                                                                                                                                                                                                                               caarcaccarigaagaagarrcirgagaccraraagggrrirrgaaggarrgacrrcrrfgg 727
                                                                                                                                                                                                                                                                             487
                                                427
                                                                                                                                                                                                                                                                                                                                                                                                                                           ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACC
                                                                                                                                                                                                                                                                                                                                                                                                 ATGCGCTTCCCAACAATGGAAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAG
                                                                                                                                                              cercriaciteceicriaaccrecreceaeceraaecrrrecegrearesecerreaaees
                                                                    TCTACGGCTTAGCGCCCGGTGTGCTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG
                                                                                2724 CTICAICTGCICCTCTGTGGTGATGTTCAIGGTT 2757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTAAAAACAAACAATGTTCCTATGAAGATGATT 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2604
                                                                                                                                                                                                                                                                                                                2305
                                                                                                                                                                                                                                                                                                                                                      2364
                                                                                                                                                                                                                                                                                                                                                                           848
                                                                                                                                                                                                                                                                                                                                                                                            2424
                                                                                                                                                                                                                                                                                                                                                                                                                                    2484
                                                                                                                                                                                                                                                                                                                                                                                                                908
                                                                                                                                                                                                                                                                           2245
                                                                                                                                     488
                                                                                                                                                                           548
                                                                                                                                                                                                                                    2185
                                                                                                                  2002
                                                                                                                                                                                                                  608
                                                                                                                                                                                                                                                       899
                                                        368
                                                                           1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                   qq
                                                                                                                                                        ઠ
                                                                                                                                                                      g
                                                                                                                                                                                          ð
                                                                                                                                                                                                            g
                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                     셤
                                                                          S G
                                                                                                            ઠે
                                                     В
                                8
```

```
CCATTACTATGAAGAAAATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG 2244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2245 regargregasgaegaerregaegecergereagearearearearegaagaaragaegaaaaa 2304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGGTCTCCATCG 2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2005 CCGCACTCAACTTGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG 2064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1825 AGCTCCCGACCCCAAGACCCCGACCCCGTCATGCTCGACCGGATCTTCCCGCCTGCTGG 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1704
                                                                                                                                                                                                                                                                                                                                                                                                                  1764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGAGATCATGGCCAAAGGACGGGCCGGGCGTTCCTCTCCACGGGGAAATCGCGGCAC 1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cercriacricidicriaacciderccaacdraaacriricderdareecerraacda 427
                                                                                                                                                                                                                                                                                                                                                                                         193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2125 ATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2065 ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCTTCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1705 AGETGGCGAGGCGCTCCCGATGCTCCTAAAGGCCGCCATCGAGATCGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                1645 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                       Length 1394;
                                                                                                                                                                                                         SEQ ID NO 14304148
NO 57313
                                                                                                                                                                                                                                                                       SEQ ID NO 13598513
NO 64102
                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 70.5%; Pred. No. 6.2e-153;
Matches 785; Conservative 0; Mismatches 322;
                                                                                                                                                              ID no. 13491017
FILE REFERENCE: 2750-1590PUS2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
FRIOR APPLICATION NUMBER: 60/544,190
PRIOR FILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 36626
                                                                                                                                                                                                                                                                          of Ceres to
                                                                                                                                                                                                               of Ceres (in SEQ ID )
                                                                                                                                                                            FEATURE:

NAME/KEY: misc_feature

LOCATION: (1)...(1394)

OTHER INFORMATION: Ortholog of

OTHER INFORMATION: as cited in

FEATURE:

NAME/KEY: misc_feature

LOCATION: (1)...(1394)

OTHER INFORMATION: as cited in

US-11-056-355B-36626
                                                                                                         TYPE: DNA
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                  Sed.
                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (1). . (1394)
OTHER INFORMATION: Ceres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  368
                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
```

547

487

607

2184

US-11-056-355B-36626

US-11-056-355B-3626. Application US/11056355B

Sequence 36626. Application No. US20060150283A1

Publication No. US20060150283A1

GENERAL INFORMATION:

APPLICANT: Brover, Vyacheslav

APPLICANT: Braxandrow, Nickolai

TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF INVENTION: Polypeptides Encoded Thereby

240

1418

1478

360

1598

480

```
-----GGGCCGGGCGCTTCCTCCACGGGGAAATCGCGGCACAGCTCCCGACCC 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1675 CGGACGACGACGCGAACCTCTTCGCCATGCAGCTGCGAGCGCCTCCGTGCTCCCCATGG 1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 14143, Application US/10449902

PUblication No. US20060123505A1

GENERAL INFORMATION:
APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: The Institute of Physical and Chemical Research.
TITLE OF INVENTION: FULL-LENGTH PLANT cDNA AND USES THEREOF
FILE REFERENCE: MOA-A0205Y1-US
CURRENT APPLICATION NUMBER: US 2002-203269

PRIOR FILING DATE: 2002-05-30

PRIOR APPLICATION NUMBER: JP 2002-203269

PRIOR APPLICATION NUMBER: JP 2002-1383870

PRIOR APPLICATION NUMBER: JP 2002-12-11

NUMBER OF SEQ ID NOS: 56791
                                                                                                                                                                                                                                                                                     421 CACTTCAATCCCCACCATTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            177 CGCTCAAGAACGCCATCGAGCTGGCTCGAGACGCTGCAGTCCGCCGCCGTCGCCG
                                                                                                             181 TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACACCCAACCCACAAAAGGTCAGATG
                                                                                                                                                                       1539 CACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCG
1239 TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT
                      121 TAAGGGTAATATATATATAACAAATAGCTCTTGTACGGGAACTCCGTATTTCTCTCACT
                                                                                    1299 TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAAAACCCACAAAAGGTCAGATG
                                                                                                                                                                                                                     1419 TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTGTGGGGTCCAATAT
                                                                                                                                                                                                                                                                                                                                                                                                361 TTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1735 TCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGAC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
14.4%; Score 437.6; DB 6;
Best Local Similarity 66.0%; Pred. No. 5.3e-116;
Matches 706; Conservative 0; Mismatches 339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Oryza sativa
PUBLICATION INFORMATION:
DATBASE ACCESSION NUMBER: AK064768
DATABASE ENTRY DATE: 2001-12-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGAA 1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-449-902-14143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 14143
                                                                                                                                                                                                                                                                                                                                                     1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                            요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                셤
                                                                                ò
                                                                                                                  요
                                                                                                                                                              8
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                   2603
                                                                                                                                                                         2483
                                                                                                                                                                                                                                                                2543
                                                                                                                                                                                                                                                                                                         AGTCACTTCCAGAGGATGGAAAGTGATATTAGCAGAGTGTATACTTCCAGAGACACCAG 1027
                                                                                                                                                                                                                                                                                                                                                                                              1028 ACTCAAGCCTCTCAACCAAACAAGTAGTCCATGTCGATTGCATTATGTTGGCTCACAATC 1087
                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTC 2663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1088 CCGGAGGCAAAGAACGAACCGAGAAAGAGTTTGAGGCATTAGCCAAAGCATCAGGCTTCA 1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1148 AGGCCATCAAAGTTGTCTGCGACGCTTTTGGTGTTAACCTTATTGAGTTACTCAAGAAGC 1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1179 AAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG 1238
                                                                                                                                                                                                                     967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u> AGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCG</u>
  TGAAAGGGATCAACTTCGACCGCCC-CAACGGATTGAAGACGCCCCACCCCTTCCTGGTG
                                      Traaaggcarcaactrirgarcrccacargrcarcgaagargcrccrrcrcarccrggra
                                                                                  TCAAGCACGTCGGAGGCGACATGTTCGTCAGGGTTCCAAAGGGAGATGCCATTTTCATGA
                                                                                                                AGTGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG
                                                                                                                                                                                                                  <u> AGTGGATATGTCATGACTGAGTGACGAACATTGCGTGAAATTCTTGAAGAACTGCTACG</u>
                                                                                                                                                                                                                                                              ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAG
                                                                                                                                                                                                                                                                                                                                                       ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1119 GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 78, Application US/11229856
; Sequence 78, Application US/11229856
; Publication No. US20060130183A1
; GENERAL INFORMATION
; APPLICANT: FORTER, RICHARD L.
; APPLICANT: ROTTWANN, WILLIAM H.
; APPLICANT: CONNETT, MARIE B.
; APPLICANT: SANDERS, PAUL
; APPLICANT: FIRZGERALD, SANDRA JOANNE
; APPLICANT: FIRZGERALD, SANDRA JOANNE
; TITLE OF INVENTION: MODIFICATION OF PLANT LIGNIN CONTENT
; FILE REFERENCE: 044463-0405.
; TITLE OF INVENTION NUMBER: US/11/229,856
; CURRENT FILING DATE: 2004-09-22
; PRIOR APPLICATION NUMBER: 10/946,650
; PRIOR FILING DATE: 2004-09-22
; PRIOR FILING DATE: 2004-09-22
; PRIOR FILING DATE: 2004-09-22
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PATENTIN VEY: 3.3
; LENGTH ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16.0%; Score 485; DB 8; Le
100.0%; Pred. No. 4.6e-130;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1208 rcraaaacaaacaarcriccrarcaagargarr 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2724 CTTGATCTGCTCCTCTGTGGTGATGTTCATGGTT 2757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-11-229-856-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 485; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                      788
                                                                                                                           848
                                                                                                                                                                         2424
                                                                                                                                                                                                                                                                                                         968
2305
                                                                                    2364
                                                                                                                                                                                                                     908
                                                                                                                                                                                                                                                                                                                                                       2544
                                                                                                                                                                                                                                                                                                                                                                                                                                          2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                2484
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                  g
                                                                                  ò
                                                                                                                  셤
                                                                                                                                                                  ઠે
                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

유 ð 요 ò g ð ద

δ

8 8

8 8

```
1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCGAGGGGGGGGGTGTTCCACGTCGACATGATCATGCTCGCCCACAACCCCGGCG 1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAACTTCGACCGCCCCAACG-GATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACG 2372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2254 GAGGCGGCACTGGCGCGTGCTCAGCATGATGCCTAGAATACCCATCAATGAAAGGGA 2313
                                                                                                                                                                                                                                                                                                                                                                             2133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   896
                                                                                          1953
                                                                                                                                                                                    2013
                                                                                                                                                                                                                                                                              ACTIGAIGAACCAGGACAAAAICCICAIGGAAAGCIGGIAITACCIGAAAGAIGCGGICC 2073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           657 ccaadanadcrigercdaccratalacecdderredacdececerccaecdredredaedred 716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ecescios de de contra de c
                                                                                                                                                                                                                                                                                                                                                                                                                          596
                                                                                                                                         416
                                                                                                                                                                                                                                                                                                                             536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5836, Application US/11056355B
Sequence 5836, Application US/20060150283A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Brock.
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2780-1590PUSC
CURRENT APPLICATION NUMBER: US/11/056,355B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAAGAGAGACACAGAAAGGAGTTTCGAGGCATTGGCCAAAGGGGGCCGGATTTCAGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ġcakagakadagancakakadagakatricadagakacricacicacacacadagarirancadadar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2430 TATGCCATGACTGGACTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTAGGGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGGCCCACAACCCAGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGA
                                                                                                                                                                                                                                                                                                                                                                                                        cesacececerricaaceceretricaaceaesecareaaeaaceacarearea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2194 TGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCG
                                                                                                                                                                                                                                                                                                                                                                          ttgaaggcggaatcccattcaacaaggcgtacgggatgaccgcgttcgagtatcatggca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGACCCCCCATTCAACAACTCTTTAACCGGGGAATGTCTGATCACTCCACTATTACTA
A---GAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACT
                                                                                          1894 CCGTGCTCACGTGCACCCTCCGCGACCTCCGCGATGGCAAGGTCGAGGCGGCTTCTACGGCT
                                                                                                                        TAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCA
                                                                                                                                                                                                                            cedededeatandeatandeatandeaceceatadeatadeatadeatadecedecende
                                                                                                                                                                                                                                                                                                              rccaagrcargrcrgcgcrrrrcgcacrcacgrcarggagrrcrcaaag 2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 10
US-11-056-355B-5836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       837
                                                                                                                                                                                                          1954 '
                                                                                                                                                                                                                                                                                                                                                 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2134
                                                                                                                                                                                                                                                       417
                                                                                                                                                                                                                                                                                                                                                                                              2074
                                                                                                                                                                                                                                                                                                                                                                                                                                              537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        597
                                                                                                                                                           357
                                                              297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
2188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2249 TGTCGGAGGCGCACTGGGGCCGTGCTCAGCATGATGGTTGCCAAATACCCATCAATGAA 2308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2309 AGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAA 2367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      680 CATCACCAAGAAGCTGCTGGACTTCTACACGGGCTTTCGAGGCGCTGTCGACGCTGGTGGA 739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             323 GCCGGCGGCGCGCGCGGCGGCGACGACGCATGCTCCGCCTGCTCGGCTC 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               740 ciredicidicide de de de celebración de contra de con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2129 TGGCACCGACCGGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2189 TACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCTTCGAAGGCTGGTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2009 ACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCGATGGCAAGGTCGAGCGGCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1949 CGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1724 GCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1784 CGGGCCGGGC-----GCGTTCCTCTCCACGGGGAAATCGCGGCACAGCTCCCGGAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                263 gecceacédececanadececerresceccedadahagradrescecedescecec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----ccagaaccccgacgcacccgrcargcrcaacccgarcrrccaacrrcaaccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chacaacarcarcaana---ccaarraaagaccaaacaacaacaacaracacacra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACCCAAGTCTCGGACGACGAGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of Ceres SEQ ID NO 14304148 in SEQ ID NO 57313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of Ceres SEQ ID NO 13598513
in SEQ ID NO 64102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 419.6; DB 9;
Pred. No. 9.3e-111;
0; Mismatches 359;
                                                                                                                                                                                                                                                                                                                                                                                            12369443
                                                                                                                                                                                                                                                                                                                                                                                                о
10
CURRENT FILING DATE: 2005-02-14
PRIOR APPLICATION NUMBER: 60/544,190
PRIOR FILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 5936
                                                                                                                                                                                                                                                                                                                                                                                                ü
                                                                                                                                                                                                                                                                                        PEATURE:

NAME/KEY: misc feature

LOCATION: (1)..(1522)

OTHER INFORMATION: Ceres Seq. I

FEATURE:

NAME/KEY: misc_feature

LOCATION: (1)..(1522)

OTHER INFORMATION: Ortholog of

OTHER INFORMATION: as cited in

FRATURE:

NAME/KEY: misc_feature

LOCATION: (1)..(1522)

OTHER INFORMATION: as cited in

OTHER INFORMATION: as cited in

US-11-056-355B-5836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 64.7%;
Matches 694; Conservative
                                                                                                                                                                                                                                                                 mays
                                                                                                                                                                                                                                                                                                                                                                                                    Sed.
                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Zea mays subsp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             440
```

619

402

282

2201

2261

522

462

2321

582

2380

2437

642

702

2497

2557

822

2617

882

942

유

g

ò

g ò 셤 δ g ઠે g ò g

ò

```
2618 AGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTC 2677
GIGIGCAAGTGGCTGACGCCCAACGAGGACGCGCTCTCCATGGCCGCCCTCGCCCTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              643 GACATGTTCGCCTCCGTGCCCCGCGGCGACGCCATCCTGATGAAGTGGATCCTCCAC
                                                                                                                                                                                                                              283 AACCAGGACAAGGTCCTCATGGAGAGCTGGTACTACCTTAAGGACGCAGTCCTGGACGGC
                                                                                                                                                                                                                                                                                                                             2082 GGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                       GGCATCCCGTTCAACAAGGCGTACGGGATGACGGCGTTCGAGTACCACGGCACGGACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 703 gacriegadeceaceaceacriececececericardaaacriecraceacecececae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2202 ATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2262 ACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      grassicacrereseccesecercaresecesecaresecesecareseces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACCGCCCCAACG-GATTGAAGACGCCCCCTCCCTCGTGTCTCAAGCACGTCGGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          dacerececeácioren en conseces de contra en conseces de contra de co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2381 GACATGTTCGTCAGCGTTCC---AAAGGGAGATGCCATTTTTCATGAAGTGGATATGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2498 AATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGACACGAGCTAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  763 CACGGGAAGGTGGTGGTGGTGGTGCGTGCTGCCGGAGAGCTCCGACGCGACGCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2558 ACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACACACCCAGGCGGGAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
US-10-532-464-1
; Sequence 1, Application US/10532464
; Publication No. US20060172402A1
; GENERAL INFORMATION:
   APPLICANT: Havkin-Frenkel, Daphna
   APPLICANT: Zylstra, Gerben J.
   APPLICANT: Frenkel, Chaim
   CURRENT FRILON NUMBER: US/10/532,464
   CURRENT FILING DATE: 2005-04-22
   PRIOR APPLICATION NUMBER: US 60/412,649
   PRIOR FILING DATE: 2002-10-23
   PRIOR FILING DATE: 2003-10-23
   NUMBER OF SEQ ID NOS: 2
   NUMBER OF SEQ ID NOS: 2
   SEQ ID NO 1
   LENGTH: 1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTGCTGCGCTTTCGGCACTCACGTCGAGGTTCCTGAAG 2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acctacatctaceccaacecctedeccatceaerrcaccaae 984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2322
                                                                                                                                              2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2678
                                                        223
                                                                                                                                                                                                                                                                                                                                                                                                                       343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               583
                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1841
                                                                                                                                                                                                                                                                                                                                  2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1962 GTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATG 2021
                                                                                                                                                                                                                                                                                                                                                                                                                       979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: National institute of regional particular and particular institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: Foundation for Advancement of International Science.
TITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF
FILE REFERENCE: MOA-A0205Y1-US
FULE REFERENCE: MOA-A0205Y1-US
FULE REFERENCE: MOA-A0205Y1-US
FULE REFERENCE: MOA-A0205Y1-US
FULE REFERENCE: 2003-05-20
PRIOR FILING DATE: 2003-05-30
PRIOR FILING DATE: 2002-05-30
PRIOR FILING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
SOUTHARE: Patentin Ver. 2.1
LENGTH: 1227
    GATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGC
                                                                                                                                                                                                                                                                                                                                                                                                    GATCCTCCACGACTGGAGCGACGCGCACTGCCACGCTCAAGAACTGCTAACGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACACCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGGAAAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGATTTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cescalacidades de consecución de cons
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCCGGGCGCGTTCCTCTCTCACGGGGAAATCGCGGCACAGCTCCCGACCCA---GAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGAAGGCGGCGCTGCTGACGCCGGAGGTGGCCGACAAGCTGCCGTCCAAGGCGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103 CCGGCGGCCGACATGGTGGACCATGCTCCGCCTGCTCGCCTCCTACAACGTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCGTCTACGGCTTAGCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     163 AGGTGCGAGATGGAGGAGGCCCCGACGGCAAGCTCTCCCGCCGCTACGCCGCCGCCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2668 CTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAG 2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCAAGGCCACCTGCATCTACGCCAACGCCTGGGCCATCGAGTTCATCAAG 1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 418; DB 6; Length 12
Pred. No. 2.4e-110;
0; Mismatches 300; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: National Institute of Agrobiological Sciences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4559, Application US/10449902
Publication No. US20060123505A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PUBLICATION INFORMATION:
DATABASE ACCESSION NUMBER: AK061859
DATABASE ENTRY DATE: 2001-12-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 67.4%;
Matches 635; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Oryza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
US-10-449-902-4559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-449-902-4559
                                                                                                                                                   2368
                                                                                                                                                                                                                                                                                                                                                                                                                       920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1902
                                                        800
                                                                                                                                                                                                                                                                                                                                  2428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43
```

엄 ઠે g ઠે 쉽 ઠે

```
TACTCCGTGCTCACGTGCACCTCCCCGATGGCAAGGTCGAGCGGGTTTAC 1949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CG------GGCCGGGCGCTTCCTCTCCACGGGGAAATCGCGGGCACAGCTCCCGACC 1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1836 CAGAACCCCGAAGCCACCCGTC----ATGCTCGACCGGATCTTCCGGCTGCTGCCAGC 1889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       254 edecegecedechadecegecegesedechadechadenseredecegandecedeced 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1124 ġrgġciaatrragarigcratrrrcacargcaaggargrggrgrcrcrrarrarargaarg 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141 GGCCGCGGTGGTGGACGACGAGGCGTGCATGTACGCGATGCAGCAGCTGGCGTCGTCGTCTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1664 GACCCAAGICTCGGACGACGACGCACCTCTTCGCCATGCAGCTGCGACCGCCTCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1724 GCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCGAGATCATGGCCAAGGA
                                                                                                                                                                                                                                                                                                                     APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1550PUS:
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT APPLICATION NUMBER: 60/544,190
PRIOR APPLICATION NUMBER: 60/544,190
PRIOR FILING DATE: 2004-02-13
MUMBER OF SEQ ID NOS: 119966
                                                                           1064 GTTAİGCTAATGTİTGGĞİCAİĞĞAAİTİCAACAATAGTAAİCTİGAAACTÜCAİAİTĞİ
                                                                                                         GATGTTCATGGTTCTTGGATTTGGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTT
                                                2685 GCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (1). (1531)
CTHER INFORMATION: Ortholog of Ceres SEQ ID NO 13598513
CTHER INFORMATION: as cited in SEQ ID NO 64102
US-11-056-3558-5315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of Ceres SEQ ID NO 14304148
in SEQ ID NO 57313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
13.1%; Score 398.2; DB 9;
Best Local Similarity 64.2%; Pred. No. 1.5e-104;
Matches 688; Conservative 0; Mismatches 358;
                                                                                                                                                                                                      TATGCATTATTTTTCTTAAAAAAAAAAAAAAA 1219
                                                                                                                                                                         2805 CGGCATACCAAGTICTTCTCATAAAAGGAAACAATA 2840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq. ID no. 12435048
                                                                                                                                                                                                                                                                              ; Sequence 5315, Application US/11056355B
; Publication No. US20060150283A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATION: (1). (1531)
OTHER INFORMATION: Ortholog
OTHER INFORMATION: as cited
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: misc feature
LOCATION: (1)...(1531)
OTHER INFORMATION: Ceres Se
FEATURE:
NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Zea mays subsp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                              RESULT 13
US-11-056-355B-5315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 5315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1784
                                                                                                                                                                                                                 1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                        2745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                              상염
                                                                                                                                                                           8
                                                            ò
                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      944 gidictritcartrigaacargahaatigrifgectcacaarccreegegaaageaaaaaaaaaaa 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2625 AGAAGGAGTITGGAGGCATIGGCCAAAGGGGCCGGATTICAGGGCTICCAAGTCAIGIGCI 2684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GIGACGACCATIGCGCGAAGTICCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAA 2504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGIGATCGTTGCAGAGTGCGTACTCCCTGTACCCAGACACGAGCCTAGCGACCAAGA 2564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2266 GGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC 2325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2326 -GCCCAACGATTGAAGACGCCCCTCCCTGGTGTCAAGCACGTCGGAGGCGACA 2384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2026 AGGACAAAAIÇÇICAIGGAAAGÇIGGIAITAÇCIGAAAGAIGÇGGICCTIGAAGGÇÇGAA 2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCCATTCAACAAGGCGTACGGGATGACGGCGTTCGAGTATCATGGCACCGGACCCGCGAT 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             704 rrccrcárgrrotircroaagcrccaccrrrccaagggiagaacargicgrograaaca 763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         823
                                                                                                                                                                                                                                                                                                                                                                                      1906 GCACCTCCGCGACCTCCCGATGGCAAGGTCGAGCTCTACGGCTTAGCGCCCGGTGT 1965
                                                                                                                                                                                                                                                                GOCCGGGCGCGTTCCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCG 1845
                                                                                                                                                                                                                                                                                                                           AGGCACCCGTCATGCTCGACCCGGATCTTCCGGCTGCTGGCTACTACTCCGGTGCTCACGT 1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    703
                                                                                                                                            1725
                                                                                                                                                                                                        1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      284 rcaccacacconcacacadadadanacaccaccadadadacacadadadanan 343
                                                                                                                                                                                                                                104 recedardacectraggeradecerceaecracecaractecaaraaarcaagecegge 163
                                                                                                                                                                                                                                                                                             164 ecccadarrodracorracodaddarriedededededectededaerecadecer 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTCATGAAGTGGATATGCCATGACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       584 radagagarakaaagaritgaagargicaargitaartgargigargigagaarid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  644 Grégaacrarchératrachécaaagharchacarahachrégéantaartréacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1966 gcaagircrigercaagaacgaggaggrerccarccgccgcacrocaacrigaacc
                                                                                                                                                                                                                                                                                                                                                     224 TAGCTCCGGGCATCGAGCGGATCCTGCGCCTGCTCACCAGCTACTCCATCCTTAACT
                                                                                                                                            TCCCCATGGTCCTAAAGGCCGGCCATCGAGATCGACCTCGTCGAGATCATGGCCAAGGACG
                                                                                                                 Gaps
                                                                                                                 ä
                                                                                   Length 1219;
                                                                                   Score 404; DB 6; Length 12
Pred. No. 2.7e-106;
0; Mismatches 475; Indels
                                                                                         Query Match 13.3%;
Best Local Similarity 59.5%;
Matches 700; Conservative
                                   ; TYPE: DNA
; ORGANISM: Vanilla planifolia
US-10-532-464-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                464
                                                                                                                                                                                                                   1726
                                                                                                                                                                                                                                                                                                                                           1846
                                                                                                                                                                                                                                                                              1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               & g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                        ద
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                      δ
                                                                                                                                                            ò
```

ŝ

1783

253

ò a ò 셤 ò g ठे

d

qq

ò

ò

g ઠે a ઠે a ઠે g ò 셤

```
1678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      313 GCTCGACCGGATCTTCCGGCTGCTGCTGCCTACTCCGTGCTCACGTGCACCCTCCGCGA 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1619 AGAGGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           253 cerereceseses as a concessor de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución del consecución de la consecución de la consecución de la consecución del consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución de la consecución d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGACGAGGCGAACCTCTTCGCCATGCAGCTGCCGAGCGCCTCCGTGCTCCCCATGGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133 CGAGGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1739 AAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGCCCGGGCGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   193 caaggccgccarcgagcrcgaccrccrcaagarcarggcaaggccgggcggcgrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGGAGGCACCCGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCTCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGC 1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ó,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Blokaberg, Leonard N.
APPLICANT: Blokaberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Medification of Plant Lignin Content
TITLE OF INVENTION: Modification of Plant Lignin Content
FILE REFERENCE: 11000.1003c6
CURRENT APPLICATION NUMBER: US/11/397,533
CURRENT FILING DATE: 2006-04-03
PRIOR PLILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1998-10-09
PRIOR FILING DATE: 1999-10-14
PRIOR FILING DATE: 1999-07-14
PRIOR FILING DATE: 1999-07-14
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 1099-07-14
SPRIOR FILING DATE: 1099-07-14
PRIOR FILING DATE: 1099-07-14
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-13
PRIOR FILING DATE: 2000-07-13
PRIOR FILING DATE: 2000-07-13
PRIOR FILING DATE: 2000-07-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTCCCCGATGGCAAGGTCGACGGCTCTACGGCTTAGCGCCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 391.4; DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 6.2e-103
0; Mismatches 11
                                PRIOR FILING DATE: 1999-07-14
PRIOR FILING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: US 09/615,192
PRIOR APLICATION NUMBER: US 10/174,693
PRIOR FILING DATE: 2002-06-18
NUMBER OF SEQ ID NOS: 407
SEQ ID NO 24
APPLICATION NUMBER: US 60/143,833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 106, Application US/11397533
Publication No. US20060183895A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12.9%;
illarity 97.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-11-397-533-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-11-397-533-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATT 2189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAA 2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGATCAACTICGACC-GCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAG 2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGG 2428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGACACG 2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1091 GGCAAGGAGCGGTACGAGCGCGAGTTCCGCGAGCTCGCCAAGGGCGCCGCCTTCTCCGGG 1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  551 GTGCTGGACGGCGCATCCCGTTCAACAAGGCGTACGGGATGACGGCGTTCGAGTACCAC 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             671 ATCACCAAGAAGCTGCTGGACTTCTACACGGGCTTTCGAGGGCGTGTCGACGCTGGTGGTGGAC
374 TACGACGTCGTCCGGTGCCAGATGGAGGACCGG---GACGGCCGGTACGAGCGCCGCTAC 430
                                                                                                                                                                                                431 TCCGCCGCCCCTCTGCAAGTGGCTCACCCCCAACGAGGACGGCGTGTCCATGGCCGCC 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2190 ACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGAT
                                                                                                GGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGGTCTCCATCGCCGCA
                                                                                                                                                                                                                                                                                                      CTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                      crégegerentandes de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra del la contra del la contra del la contra del la contra del la contra de la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        611 GGCACGGACGCGCCTTCAACCGCGTGTTCAACGAGGCCATGAAGAACCACTCGGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTCAACTTCGACCTGCCGCACGTCATCTCCGAGGCGCCGCCGTTCCCCCGGCGTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cacereseceseacarerresegrecereceseceseseacecarecrearsaasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATATGCCATGACTGAGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1031 ACCCCCAAGGCGCAGGGCGTGTTCCACGTCGACATGATCATGCTCGCGCACAACCCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGGCCGGATTTCAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAG 2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Trcaaggccaccracarcracgccaaggccrgggccarcgagrrcarcaag 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: BLOKAGEGY, Leonard N.
APPLICANT: Blokagegy, Leonard N.
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Maderials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content
FILE REPERENCE: 11000.1003c6
CURRENT APPLICATION NUMBER: US/11/397,533
CURRENT FILING DATE: 1996-04-03
PRIOR PILING DATE: 1997-11-21
PRIOR PILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-11-397-533-24
; Sequence 24, Application US/11397533
; Publication No. US20060183895A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    791
                                                                                                1950
                                                                                                                                                                                                                                                                                                                                                                                                      491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2369
                                                                                                                                                                                                                                                                                                      2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2549
```

g

ò

a

ઠે

a

ઠે

```
1861 TCGACCGGATCTTCCGGCTGCTGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACC 1920
                                                                                                            1681 Accadecrariconocarecardos estas de 1740
                                                                                                                                                              ö
                                                                                                                                                                     241 TCTCCCCGGGGGAAGTCGCGGCCCAGCTCCCGACCCAGAACCCCGAGGCACCCGTAATGC 300
                                                                                                                                                                                               Gaps
                                               ;
0
                                                                                                                                                                                                                  Query Match
Best Local Similarity 97.5%; Pred. No. 8e-103;
Matches 397; Conservative 0; Mismatches 10; Indels
; SEQ ID NO 106
; LENGTH: 407
; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-11-397-533-106
                                                                                                                                                                                                         g
                                                                                                                                                                                                                       ઠ
                                                                                                                                                                              임
                                                                                                                                                                                              ò
                                                                                                                            q
                                                                                                                                       중염
                                                                                                                                                                    δ
                                                                          g
                                                                                         à
                                                                                                   a
                                                                                                              8
```

Search completed: November 1, 2006, 14:52:56 Job time : 658.143 secs

nucleic

Run on:

Sequence:

```
AC10357 Rattus no
AC123243 Rattus no
AC123243 Rattus no
                                                                    ACC69535 Wus muscu
ACC12735 Drosophil
ACC18487 Drosophil
ACC18488 Drosophil
ACC1848 Drosophil
ACC1845 Rattus no
ACC0345 Rattus no
ACC094575 Rattus no
ACC095781 Rattus no
ACC1975 Rattus no
ACC1975 Rattus no
ACC1975 Rattus no
ACC1975 Rattus no
ACC1975 Rattus no
ACC1975 Rattus no
ACC1975 Rattus no
ACC19330 Rattus no
ACC18330 Rattus no
ACC18330 Rattus no
ACC18330 Rattus no
ACC18330 Rattus no
ACC18330 Rattus no
ACC18330 Rattus no
                                                                                                                                                                                                                                                                                                                                                                                     ALS90310 Homo sapi
AC026917 Homo sapi
AC115540 Homo sapi
AC105920 Homo sapi
AC141028 Rattus no
AC112812 Rattus no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      creaccarrraarrceaeaecacarcecceaaarrarrcrrcrrecreccaraacrer 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1079 cgaartrircictririaggraagraaccaargargcgccargrigacaaaaaggcrgarra 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAT 17-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCTTTCCTTAACAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unknown.
Unclassified.
Unclassified.

(I bases I to 3070)

Perera,J.R., Eagleton,C. and Rice,S.J.

Compositions and methods for the modification of gene expression
Patent: US 659625-A 113 22-JUL-2003;

Genesis Research & Development Corp. Ltd. and Rubicon Forests
NOXX;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%; Score 657; DB 2; Length 3070; Best Local Similarity 100.0%; Pred. No. 2.8e-208; Matches 657; Conservative 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AR360987 3070 bp D
Sequence 113 from patent US 6596925.
AR360987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="genomic DNA"
                     ACI10357
ACI103243
ACI07323
ACO69535
ACO69535
ACO18487
ACO18488
ACO18488
ACO18488
ACO18488
ACO94575
ACI3645
ACI38645
ACO94575
ACI3649
ACI38645
ACI38645
ACI38645
ACI38645
ACI38645
ACI38645
ACI38645
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
ACI38646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1. .3070
/organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AR360987.1 GI:33768497
                                                                                                                                                                                                                                                                                                                                                                                                                           167483
182375
231007
267468
 8.1 249121
7.6 198450
7.6 198450
7.6 252137
7.5 193795
7.5 5626
7.5 1651248
7.5 1651248
7.5 182416
7.5 182416
7.5 182416
7.5 204000
7.5 74587
                                                                                                                                                                                                                                                                                                                                     298672
                                                                                                                                                                                                                                                                                                                    244684
                                                                                                                                                                                                                                         Unknown.
                                                                                          44444444 444

4444444440000
                                                                                                                                                                                                                                                                                                                                                     47.6
47.6
47.6
                                                                                                                                                                                                                                                                                                                                                                                                          47.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 1
AR360987
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AR30905 Sequence
BD26116 Compositi
AR36091 Sequence
BD261183 Materials
AR216433 Sequence
AR01415 Sequence
AR07415 Sequence
AR07415 Sequence
BD24300 Materials
BD05663 Materials
BD24300 Materials
BD24300 Materials
AR3752 Sequence
BD24383 Materials
AR43754 Sequence
BD24382 Materials
AR43754 Sequence
BM224382 Materials
AR43754 Sequence
AR43784 Sequence
                                                                                                                                                   (without alignments)
11193.945 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AR360987 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                ; Search time 3753.23 Seconds
                                                                                                                                                                                                                                             657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                           1 ctgagccatttaattcgaga.....aggagagagagagatt
                     GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                     6366136 seqs, 31973710525 residues
                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                 US-10-702-319A-113_COPY_1019_1675
657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Maximum Match 100%
Listing first 45 summaries
                                                                                           nucleic search, using sw model
                                                                                                                              October 31, 2006, 23:27:09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BD262168
BD260953
BD22433
AR216433
AR216433
AR432835
AR074115
BD224300
BD224300
BD224300
AR216350
AR21643275
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD224382
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD24482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD2482
BD248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AR360987
BD262120
AR360905
                                                                                                                                                                                                                                                                                                 Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ü
                                                                                                                                                                                                                                                                                                                                                                                                            seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            四
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2096
2096
1630
1630
421
421
421
421
421
421
                                                                                                                                                                                                                                                                                 IDENTITY NUC
                                      Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Match ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10:
11:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing:
                                                                                                                                                                                                       Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             638.2
638.2
638.2
638.2
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73.8
73.8
73.8
73.8
73.8
73.8
73.4
73.4
73.4
                                                                                                                                                                                                                                                                                 Scoring table:
```

Minimum DB E Maximum DB E

Database

Searched:

ö

Gaps

9

Result Š. ä

9 9 120 120 180 180

```
17-AUG-2003
                                                                                                                                                                                                                                                                                                  1 (Deser 1 to 661)
Perera, J. R., Eagleton, C. and Rice, S. J.
Perera, J. R., Eagleton, C. and Rice, S. J.
Compositions and methods for the modification of gene expression
Patent: US 6596925-A 12 22-JUL-2003;
Genesis Research & Development Corp. Ltd. and Rubicon Forests
Holdings Ltd.; Parnell;
NZX;
                                                                                                                                                                                                                                                                                                                                                           597 CIGCITICCITIGCICCAAGICTCGCGGAAGAGAAGAAGAAGAAGAAGAATGGGT
                                                                                                                                                                                                                                                                                                                                                                     AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                   477 ACAIAITGGIGIAGGGICCAAIAITITGCGGGAGGGITGGIGAACCGGAAAGITCCTAIA
                                                                                                                                                                                                                                                                                                                           TAICGAACCICCACCACCACATCCTCAATCCCCACCATTTATCCGTTTTATCCT
                                                                                                                                                                                                                                                                                                                                   AGAGITITCICICIATAITCIGGITCACCGGTIGGAGICAAIGGCAIGCGIGCGAAGGI
                                                                                                                                                             GTATGATCTTGGAGTTGTTGGAAATTTGCAAGCTGACGATGGGCCCTCAGGGAAATT
                                                                                             AAGGCGCCAAACCCAGATTGCAAAAGAGCACAAAAGAGCACGACCTTTCCTTAACAAG
                                                                                                                             241 ATCATCACAGATCGGCCAGTAAGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                    AACTCCGTATTTCTCTCCATCCCTTGATTAATTTTGGTGGGAAAGCGACAGCC
                                                61 CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                           CTGAGCCATTAATTCGAGAGACATCGCCCAAAATTATTCTTGTTGCTGCCATAACTGT
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAT
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
Indels
3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       AR360905 661 bp
Sequence 12 from patent US 6596925.
AR360905
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .661
/organism="unknown"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:33768415
  0
   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AR360905.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unknown
                                                                                                                                                                                                                                                                                                                                                                                                    T 657
                                                                                                                                                                                                                                                                                                                                                                                                                    661
     654;
                                                                                                                                                                                                                                                                                                                                  537
                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                    657
                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                               417
                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                            301
                                                                                                                                                                                                                              361
                                                                                                                                          181
                                                                                                                                                                           241
                                                                                                                          181
                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 3
AR360905
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                        g
                                                                                                                                                                                                         셤
                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                            ò
                                                                      ద
                                                                                          à
                                                                                                      g
                                                                                                                       8
                                                                                                                                          q
                                                                                                                                                        ò
                                  d
                                                       ò
                       8
                                                                                                                                                                                                                                                                                                                  1498
                                                                                                                                                                                                         PAT 17-JUL-2003
                                                                                                                                                                        1318
                                                                  AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                             480
                                                                                                                                                             ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC 540
                                                                                                                                                                                               GAACCTCCACCATACCTCACTTCAATCCCCACCATTAATCCGTTTTAATTTCCTCTGC 600
                                                           360
                                                                                            420
                                                                                                                                                                                                                                          661 bp DNA linear PAT 17-JUL-2
for the modification of gene expression.
                                                                                                                                                                                                                                 657
                                  AACTCCGTATTTCTCTCTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                            TTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                     ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                 TTTCCTTTGCTCGAGGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAAAATGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 638.2; DB 2;
Pred. No. 3.4e-202;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. 661
/organism="Bucalyptus grandis"
/ool_type="genomic_DNA"
/db_xref="taxon:71139"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (1) . . (654)
(537) . . (543)
(499) . . (502) .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATA signal (537). . . CAAT signal (499). . Location/Qualifiers
                                                                                                                                                                                                                                                                                                BD262120
Composition and methods
BD262120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 표보답답
                                                                                                                                                                                                                                                      1619
                                                                                                                  1379
                                                                                                                                                                    481
                                                                                                                                                                                     1499
                                                                                                                                                                                                                      1559
                                                                                                                                                   1439
                                                                                                                                                                                                      541
                                                                                                                                                                                                                                       601
                                                                                 1319
                                                                                                                                    421
                                                1259
                                                                                                   361
                                                                301
                               241
                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                 RESULT 2
BD262120
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                      셤
                                                                                                               g
                                                                                                                                රු පි
                                                                                                                                                                ð
                                                                                                                                                                                  ద
                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                       δ
                                                                             g
                                                                                                  ઠ
                                            ዊ ራ
                               õ
```

929 9

596 900

420 476 480 536

360 360 416

ы

Ы 60/146591

بإدا

-

셤 ò ద ઠ g ò

61

61

121

121

181

QQ

241

ठ

셤

181

301

셤

301

ò

361 417

g ò q

361

ò

477

ઠ

421

537

δ

481

g

597 601 657

Š

셤 ð g

661

RESULT 4
BD262168
LOCUS
DEFINITION
ACCESSION
KEYWORDS
SOURCE

ORGANISM

REFERENCE AUTHORS TITLE JOURNAL

COMMENT

541

g

```
101 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA 160
                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGGAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACTGCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGGAAATTTGCAAGCTGACGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGCGCCAAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCATCACAGATCGGCCAGTAAGGGTAATATTAATTTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAGTTTTCTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATCGAACCTCCACCATCCATCACTTCAATCCCCACCATTTATCTCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAICGAACCICCACCACCATACCICACTICAAICCCCACCATITAICCGITITAITICCI
PN JP 2002539834-A/60
PD 26-NOV-2002
PF 24-FEB-2000 JP 2000608755
PR 25-MAR-1999 US 09/276599,30-JUL-1999 US 60/1465
RANJAN PERERA, STEPHEN J RICE, CLARE KATHERINE EAGLETON PC C12N15/09, A01145/00, C07K14/415, C12N5/10, C12Q1/02, C12Q1/68, PC C12N5/00
CC Composition and methods for the modification of gene
                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTTG
                                                                                                                                                                                         1. .2096
/organism='Eucalyptus
                                                                                                                                                                                                                                                                                                                                             Score 638.2; DB 2;
Pred. No. 4.9e-202;
0; Mismatches 3;
                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                      Location/Qualifiers
1. 2096
(/organism="Eucalyptus grandis"
/mol type="genomic DNA"
/db_xref="taxon:71139"
                                                                                                                                                                                                                                                                                                                                                 97.1%;
98.9%;
                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 98.9
Matches 654; Conservative
                                                                                                                                                       expression
                                                                                                                                                                                           Bource
                                                                                                                                                                           표된답
                                                                                                                                                                                                                                                                                                                                                                                                                       н
                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   597
                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA linear PAT 17-JUL-2003 modification of gene expression.
                                                                                                                                                         120
                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                           120
                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eucalyptus grandis
Eukaryotas, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Eukaryotas, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosida; Myrtales; Myrtaceae, Bucalyptus.

1 (bases 1 to 2096)
Perera, R., Rice, S.J. and Eagleton, C.K.
Composition and methods for the modification of gene expression
Patent: JP 2002539834-A 60 26-NOV-2002;
ENERSIS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE
FORESTS INDUSTRIES LTD
OS Eucalyptus grandis (flooded gum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     959
                                                                                         9
                                                                                                                       9
                                                                                                                                                                                                                         241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTCCGTATTTCTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                           CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                         CGAATTTTCTCTTTTAGGTAAGTAACCAATGAGGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                               AAGGCCCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGITITICICICIATATICIGGITCACCGGITGGAGICAAIGGCAIGCGIGACGAAIGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTTTTCTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATCGAACCTCCACCACCATACCTCCACTTCACCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCTTTATTCCCT
                                                       Gaps
                                                         .,
                       Length 661;
                                                     Indels
                   Score 638.2; DB 2;
Pred. No. 3.4e-202;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2096 bp
for the m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BD262168
Composition and methods
BD262168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BD262168.1 GI:33071936
JP 2002539834-A/60.
                     97.1%;
98.9%;
                                                       Conservative
                   Query Match
Best Local Similarity
Matches 654; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H
```

120

100

9

Gaps

4,

Length 2096; Indels

gum) '.

grandis (flooded

ပ္ပ

180

240 280 300

220

360

400 416 460

340

476

520 536 580

969 640 959 700

> 657 701 ы - [-

657 701

ò

```
BD224383
BD224381 GI:33034153
BD224381. GI:33034153
BD224381. GI:33034153
BD2243820.6-A/107.
Eucalyptus grandis
Eucalyptus grandis
Eucalyptus grandis
BNAETYOCA; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
Spermatophyta; Magnoliophyta; eudicotyledons;
Spermatophyta; Magnoliophyta; Eucalyptus.
CE 1 (bases 1 to 1630)
I (bases 1 to 1630)
RS Bloksberg,L.N. and Havukkala,I.J.
RATERIA and methods for the modification of plant lignin content
Materials and methods and methods for the modification of plant lignin content
FORESTS LTD
OS Eucalyptus grandis
PN JP 2002527058-A/107
PD 27-AUG-2002
PR 06-OCT-1999 US 09/169789,14-JUL-1999 US 60/143811 PI
PR 09-OCT-1999 US 09/169789,14-JUL-1999 US
LEONARD NATHAN BLOKSBERG, ILKRA JAAKKO HAVUKKALA PC
CI2NNS/09,A01HS/00,CI2NS/00,CI2NS/00,CI2NS/02,CI2NS/02,CI2NS/04,CI2NS/
CC Materials and methods for the modification of plant lignin CC
CC Materials and methods for the modification of plant lignin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases I to 1630)
Bloksberg, L.N. and Havukkala, I.
Bloksberg, L.N. and Havukkala, I.
Materials and methods for the modification of plant lignin content
Patent: US 6410718-A 107 25-UDN-2002;
Genesis Research & Development Corporation Ltd. and Fletcher
Challenge Forests Ltd.;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAT 25-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         642
                                                     BD224383 117-JUL-2003 Materials and methods for the modification of plant lignin content.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ce 1. 1630 / Organism='Bucalyptus grandis'
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.4%; Score 75; DB 2; Length 163
|larity 100.0%; Pred. No. 4.5e-13;
| Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .1630
/organism="Bucalyptus grandis"
/mol_type="genomic DNA"
/db_xref="taxon:71139"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AR216433 1670m patent US 6410718. AR216433 GI:23314913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      643 AGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAGAGAATGGGTT 75
                                                                                                                                                                                                                                                                                                                                                                                                                                       content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 75; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
Unknown.
T 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                      FT
FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                    LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 7
AR216433
                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                           RESULT 6
BD224383
                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGCGCCAAACCCAGATTGCAAAGAGCACAAGAGCACGACCCAACCTTTCCTTAACAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTATGATCTTGGAGTTGTTGGAAATTTGGAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT 17-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                       09
                                                                                                                                    1 (bases 1 to 2096)
Perera,J.R., Eagleton,C. and Rice,S.J.
Compositions and methods for the modification of gene expression
Patent: US 659625-A 60 22-JUL-2003;
Genesis Research & Development Corp. Ltd. and Rubicon Forests
Holdings Ltd.; Parnell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATCGAACCTCCACCACACATACCTCCATTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 AACTCCGTATTTCTCTCACTCCATAAACCCCTGATTAATTTGGTGGGAAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        417 AGAGTITITCICICIATATICIGGTICACCGGTIGGAGICAAIGGCAIGCGIGACGAAIGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     477 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAATITICICITITAGGTAAGIAACCAAIGAIGCGCCAIGITGACAAAAAGGCIGATTA
                                                                                                                                                                                                                                                                                                                                                                                    CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                 Length 2096;
                                                                                                                                                                                                                                                                                                                                                              Indels
                                     linear
                                                                                                                                                                                                                                                                                                                                                              3
                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                 97.1%; Score 638.2; DB 2; 98.9%; Pred. No. 4.9e-202; iive 0; Mismatches 3;
                                      DNA
                                   AR360953 2096 bp 1
Seguence 60 from patent US 6596925.
AR360953
                                                                                                                                                                                                                                                                                           /mol_type="genomic DNA"
                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                             organism="unknown"
                                                                                GI:33768463
                                                                                                                                                                                                                                                                                                                                                     al Similarity 98.9
654; Conservative
                                                                                                                                                                                                                                                                 .2096
                                                                                                                          Unknown.
Unclassified.
                                                                                 AR360953.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T 657
                                                                                                               Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                        Best Local
Matches 65
                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                       source
              RESULT 5
AR360953
LOCUS
DEFINITION
                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

셤 ò g ò 엄 ò

ò

g ò

ò 셤 q ò ద ò

g ò

ö

ö

Gaps

ö

640

72

بإدا

```
OS Unidentified
PN JP 2001500378-A/24
PD JE-JAN-2001
PP 10-SEP-1997 JP 1998513535
PR 11-SEP-1996 US 08/713000
PI LEONARD NATHAN BLOKSBERG, ALISTAIR WALLACE GRIERSON, PI ILKKA JAAKKO HAVUKKALA
PC C12M15/53, C12M15/54, C12M15/52, C12M15/60, C12M15/82, A01H5/00 CC Strandedness: Single;
CC Topology: Linear;
FH Key Location/Qualifiers
FT Source /organism='Unidentified'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BD224300 421 bp DNA linear PAT 17-JUL-2003
Materials and methods for the modification of plant lignin content.
BD224300
                                                                                                                                                                                                                                                          BD005663 421 bp DNA linear PAT 31-JAN-2002
Materials and methods for the modification of plant lignin content.
                                                                                                                                                                                                                                                                                                                                                                   unclassified sequences.

1 (bases 1 to 421)

Bloksberg,L.N., Grierson,A.W. and Havukkala,I.J.

Materials and methods for the modification of plant lignin content Patent: JP 2001500378-A 24 16-JAN-2001,

GENESIS RESEARCH & DEVELOPMENT CO LTD, LETCHER CHALLENGE FORESTS
                                                                                                        11.2%; Score 73.8; DB 2; Length 421; 97.4%; Pred. No. 7.2e-13; tive 0; Mismatches 2; Indels (
                              Length 421;
                                                            2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism='Unidentified'
                          Score 73.8; DB 2;
Pred. No. 7.2e-13;
0; Mismatches 2;

    .421
    /organism="unidentified"
    /mol_type="genomic DNA"
    /db_xref="taxon:32644"

                                                                                                                                                                                                                                                                                                        BD005663.1 GI:18634034
JP 2001500378-A/24.
                                                                                                                                                   641 AGAGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               641 AGAGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BD224300.1 GI:33034070
                                                                                                                                                                                 73 AGAGGAGAGATGGGTT 89
                              11.2%;
97.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGGAGAGAATGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JP 2002527058-A/24.
Eucalyptus grandis
Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                            Conservative
            unidentified
                                                                                                                                                                                                                                                                                                                                                        unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
hes 75; Conserv
                                                                                                                                                                                                                                                                                            BD005663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                        DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                              RESULT 10
BD005663
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BD224300
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                  g
                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                        ö
                                                                                                                                                                                                                                                                                                          PAT 18-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Increased 1 to 421)
Bloksberg, L.N., Havukkala, I. and Grierson, A.W.
Materials and methods for the modification of plant lignin content
Patent: US 595,486-A 24 14-SEP-1999;
Location/Qualifiers
                                                                                                                                      642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               642
                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 1630)
Blokebergi.N. and Havukkala,I.
Blokebergi.L.N. and Havukkala,I.
Pinus radiata nucleic acids encoding O-methyl transferase and methods for the modification of plant lignin content therewith Patent: US 6653528-A 107 25-NOV-2003;
Genesis Research & Development Corporation Limited and Rubicam Porests Industries Limited, Parnell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT
                                                                        Query Match 11.4%; Score 75; DB 2; Length 1630; Best Local Similarity 100.0%; Pred. No. 4.5e-13; Matches 75; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.4%; Score 75; DB 2; Length 1630; 100.0%; Pred. No. 4.5e-13; cive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                        AR432835
Sequence 107 from patent US 6653528.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AR074115 421 bp 1
Sequence 24 from patent US 5952486.
AR074115.1 GI:10000875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="unknown"
/wol_type="unassigned DNA"
                              /mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic DNA"
              /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .1630
/organism="unknown"
                                                                                                                                                                                                                                                                                                                                      AR432835
AR432835.1 GI:40195438
                                                                                                                                                                                                 643 AGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         643 AGGAGAGAATGGGTT 657
                                                                                                                                                                                                                            61 AGGAGAGATGGGTT 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAGAGAATGGGTT 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ouery Match
Best Local Similarity 100..
Fig. Conservative
1. .1630
                                                                                                                                                                                                                                                                                                                                                                                                    Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown.
                                                                                                                                                                                                                                                                                                                                                                                    Unknown
   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION,
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                             RESULT 8
                                                                                                                                                                                                                                                                                          AR432835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AR074115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                   g
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                      8
                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

ILKKA

ö

ó

640

ö

72

```
PAT 25-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAT 18-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases I to 421)
Bloksberg, L.N. and Havukkala, I.
Bloksberg, L.N. and Havukkala, I.
Materials and methods for the modification of plant lignin content
Patent: US 6410718-A 24 25-JUN-2002;
Genesis Research & Development Corporation Ltd. and Fletcher
Challenge Forests Ltd.;;
                                     Location/Qualifiers
1. .421
/organism='Eucalyptus grandis (flooded gum)'.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                                                                                                                                                                                                                                                 .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 421;
                                                                                                                                                                                                                                                                                                               Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11.2%; Score 73.8; DB 2;
ilarity 97.4%; Pred. No. 7.2e-13;
Conservative 0; Mismatches 2;
                                                                                                                                                                                                                                                                                                            Score 73.8; DB 2;
Pred. No. 7.2e-13;
0; Mismatches 2;
                                                                                                                                                          1. .421
/organism="Bucalyptus grandis"
/mol_type="genomic DNA"
/db_xref="taxon:71139"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 24 from patent US 6653528.
AR432752
AR432752.1 GI:40195355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AR216350 421 bp 1
Sequence 24 from patent US 6410718.
AR216350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .421
/organism="unknown"
/mol_type="genomic DNA"
                             compostition and metabolism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unclassified.
1 (bases 1 to 421)
Bloksberg, L.N. and Havukkala, I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      641 AGAGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      641 AGAGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AR216350.1 GI:23314830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGGAGAATGGGTT 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAGGAGAGAATGGGTT 89
                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 97.4%;
Matches 75; Conservative
       content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 75; Conserv
                                                                               Bource
                                                       Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown
                             SEEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
AR432752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
AR216350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BD273002 421 bp DNA linear PAT 17-JUL-2003 Materials and methods for the modification of isoprenoid content,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ပ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; coreside, Wyrtalees; Myrtacee; Eucalyptus.

(Dases 1 to 421)
Bloksberg,L.N. and Havukkala,I.J.
Materials and methods for the modification of plant lignin content generials Roles and methods for the modification of Plant lignin content Genesis Research and Development Corp. FLETCHER CHALLENGE FORESTS LID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     581 ATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAAGAGAGAAGAAGAGGAGG 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JP 2002541764-1A/69.

Bucalyptus grandis

Eucalyptus grandis

Eucalyptus grandis

Eucalyptus grandis

Eucalyptus grandis

Eucalyptus, magnoliophyta; eudicotyledons; core eudicotyledons;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;

rosids; Myrtales; Myrtaceae; Eucalyptus.

1 (Bases 1 to 421)

Havukkala, I.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ILKKA JAAKKO HAVUKKALA

PC CI2N15/09, A01H5/00, C12N1/15, C12N1/19, C12N1/21, C12N5/10, C12N5/

PC 10, C12N9/00, PC C12Q1/68, C12N15/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N15/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00, C12N5/00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Materials and methods for the modification of isoprenoid content, composition and metabolism baten: JP 2002541764-A 69 10-DEC-2002; GRNESIS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE PORESTS INDUSTRIES LTD
                                                                                                                                                                                                                                 OS Eucalyptus grandis
PN JP 2002527058-A/24
PD 27-AUG-2009
PP 06-OCT-1999 JP 2000575991
PR 09-OCT-1999 US 60/143811 PI
LEONARD NATHAN BLOKSBERG, ILKKA JAAKKO HAVUKKALA PC
CI2NIS/09, A01H5/00, C12NS/10, C12N9/00, C12N9/04, C12N9/ PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Materials and methods for the modification of plant lignin content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10,CIZN9/00,
CIZQ1/68,CIZN15/00,CIZN5/00,CIZN5/00
Materials and methods for the modification of isoprenoid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             th 11.2%; Score 73.8; DB 2; Length 421; Similarity 97.4%; Pred. No. 7.2e-13; 75; Conservative 0; Mismatches 2; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism='Eucalyptus grandis'
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers

    .421
    forgania="Bucalyptus grandis"
|mol_type="genomic DNA"
|db_xref="taxon:71139"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eucalyptus grandis (flooded gum)
JP 2002541764-A/69
10-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                            C12N9/88, C12N15/00, C12N5/00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-DEC-1999 JP 2000588332
17-DEC-1998 US 09/2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       compostition and metabolism.
BD273002
BD273002.1 GI:33082770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          641 AGAGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGGAGAGAATGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                 10,C12N9/24,
PC C12N9/E
CC Materia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           표보타
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
                                                                                  REFERENCE
AUTHORS
                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
BD273002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DRIGIN
```

유 8

8 셤 ö

640

```
BD24382.1 GT:33034152

JP 2002527058-A/106.

Bucalyptus grandis

SM Eucalyptus grandis

SM Eucalyptus grandis

SM Eucalyptus grandis

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; Myrtaceae; Eucalyptus.

E 1 (bases 1 to 407)

S Bloksberg, L.N. and Havukkala, I.J.

Materials and methods for the modification of plant lignin content GRENESIS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE FORESTS IID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OS Eucalypeur

PN JP 2002527058-A/106

PN JP 2002527002

PD 27-A0G-2002

PP 06-OCT-1999 JP 2000575991

PR 09-OCT-1998 US 09/169789,14-JUL-1999 US 60/143811 Pl

LEONARD NATHAN BLOKSBERG,ILKKA JAAKKO HAVUKKALA PC

C12N15/09,A0115/00,C12N5/10,C12N9/00,C12N9/04,C12N9/ PC

10,C12N9/24,

PC C12N9/24,

PC C12N9/88,C12N15/00,C12N5/00

CC Materials and methods for the modification of plant lignin CC

CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CONTENT CON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BD224382 And methods for the modification of plant lignin content.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ပ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pinus radiata nucleic acids encoding O-methyl transferase and methods for the modification of plant lignin content therewith Patent: US 663528-A 24 S-NOV-2003; Genesis Research & Development Corporation Limited and Rubicam Porests Industries Limited; Parnell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
11.2%; Score 73.4; DB 2; Length 407;
Best Local Similarity 98.7%; Pred. No. 9.8e-13;
Matches 74; Conservative 0; Mismatches 1; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 11.2%; Score 73.8; DB 2; Length 421; Best Local Similarity 97.4%; Pred. No. 7.2e-13; Matches 75; Conservative 0; Mismatches 2; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1..407
/organism="Bucalyptus grandis"
/mol_type="genomic DNA"
/db_xref="taxon:71139"
                                                                                                                                                                                                                                                                            1. .421
/organism="unknown"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              641 AGAGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGGAGAGAATGGGTT 89
                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BD224382
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                         FEATURES
               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

643 AGGAGAGAATGGGTT 657

8 A

셤

Search completed: November 1, 2006, 11:25:41 Job time : 3757.23 secs

THIS PAGE LEFT BLANK

```
October 31, 2006, 23:17:03; Search time 277.948 Seconds (without alignments) 16480.672 Million cell updates/sec
                                                                                                                                                                                                                   US-10-702-319A-113_COPY_1019_1675
657
1 ctgagccatttaattcgaga......aggagagagagaatgggtt 657
                                                                                                                                                                                                                                                                                                                                                                                                                       10489840
GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                         5244920 seqs, 3486124231 residues
                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                        IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                   Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                              Run on:
```

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

N_Geneseq_8:* 1: geneseqn19

Database :

genesequi980s:* genesequi990s:* genesequi200s:* genesequi200ibs:* genesequi200ibs:* genesequi200ibs:* genesequi200ibs:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

geneseqn2004as:* geneseqn2004bs:* geneseqn2005s:* geneseqn2006s:*

geneseqn2003as:* geneseqn2003bs:* geneseqn2003cs:* geneseqn2003ds:

	Description	Abk17109 Eucalyptu	Adh75529 Eucalyptu	Adw80563 E. grandi	Aac62762 O-methyl	Abk17027 Eucalyptu	Adh75428 Eucalyptu	Adw80462 E. grandi	Aac62810 O-methyl	Abk17075 Eucalyptu	Adh75476 Eucalyptu	Adw80510 E. grandi	Adq88319 Eucalyptu	Adq88320 Eucalyptu	Adq88321 Eucalyptu		Adq88323 Eucalyptu	Adq88324 Eucalyptu	Aaa68014 Eucalyptu
SUMMARIES	D	ABK17109	ADH75529	ADW80563	AAC62762	ABK17027	ADH75428	ADW80462	AAC62810	ABK17075	ADH75476	ADW80510	ADQ88319	ADQ88320	ADQ88321	ADQ88322	ADQ88323	ADQ88324	AAA68014
	DB	9	10	14	٣	9	10	14	٣	9	10	14	13	13	13	13	13	13	Э
	Query Match Length DB	3070	3070	3070	661	661	661	661	2096	2096	2096	2096	534	485	306	293	119	98	1630
de	Query Match	100.0	100.0	100.0	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.1	81.3	73.8	46.6	44.6	18.1	14.9	11.4
	Score	657	657	657	638.2	638.2	638.2	638.2	638.2	638.2	638.2	638.2	534	485	306	293	119	98	75
	Result No.	-	7	m	4	S	9	7	ω	0	10	11	12	13	14	15	16	17	18

4 Add41764 O-methyl 4 Aav23844 Plant OMT Aaz66845 Eucalyptu 1 Aaa669595 Eucalyptu 81 Aaa67911 Eucalyptu 81 Aad67181 O-methyl 81 Aad67181 Eucalyptu Aad61181 O-methyl Aad68135 Eucalyptu 6 Abl14765 D-methyl 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88325 Eucalyptu 7000 Add88321 Rice DNA 7000 Add88321 Rice DNA 7000 Add88321 Rice Com 7000 Add88321 Rice Com 7000 Add88321 Rice Com 7000 Add88321 Rice Com 7000 Add88321 Murine Ca 7000 Add88321 Mouse Egr 7000 Add88323 Mouse Egr 7000 Add88323 Mouse Egr	MENTS eotide #51. pollen; bud; m	ESTS IND LTD. Sequences from Pine and Eucalyptus useful dogenous and/or heterologous plants. English. ted promoter sequences from Pinus radiata sing a sequence chosen from leaf-, root-, em-specific promoters or temporally
ADD41764 AAV23844 AAAV23848 AAAC69815 AAAC67911 ADD41C811 ADD41763 ADC8815 ADC8815 ADC8816 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 ADC08416 AD	0 B pol	15. (01. (24.) CORP LTD. (FORESTS IND) On C, Lashan ter sequences of endogenous fric plants. (pp; English. solated promc
100 100 100 100 100 100 100 100 100 100	30) (t; ot	98401. 84624. SV CORP GE FORM GE FORM OMOTER 1 Of end 1 of end 1 2 end 1 2 end 1 3 end 1 5 end 1 5 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 7 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 7 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 7 end 1 6 end 1 6 end 1 6 end 1 6 end 1 6 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end 1 7 end
1630 421 421 421 421 421 407 66 5626 1951 10000 2000 2199 378 378 110000 61009 61009 21009 21009 2132942 132942 24080 24080 24080	; cDNA; st entr s promo eaf; ro	s. WO-NZOC US-0055 US-0075 US-0077 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US-0071 US
11111111111000000000000000000000000000	standard 02 (fir. s grandi pine; lu	grandisAl
анананана	tand 2 (grai pine regr	1485-A1. 2001. 2001, 2001 2000; 2000 2000; 2000 2000; 2000 2001 2001 2001 2001 2001 2001 2001
LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC LCC L	7109; 7109; AR-20 AR-20 Oter; orall	alypt DEC-: DEC-: DUN-: UUN-: UNE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-: STE-:
12222222222222222222222222222222222222	254 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Buca 27-1 20-1 20-1 20-1 (GEI (FLI) WPI I Perr Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly Poly
0000 0000 000000	RESULT ABK1711 ID AL XX AC AL XX XX XX XX XX XX XX XX XX XX XX XX XX	CCC

(first entry)

22-APR-2004

```
1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rrircrcrarararrenderreacregarreaareacarecereacearetaarar 1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAACCICCACCACCATACCICACITICAAICCCCACCAITITAICCGITTITAITTCCTCIGC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                target organism, in particular a plant. The method is useful for modifying expression of a polynucleotide that comprises an intron sequence, through removal of the intron sequence. The method is useful for modifying growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional cloning of genes, in various assays to determine biological activity, to raise antibodies, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABK17016-ABK77125 represent Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                     1 Bucalyptus grandis polynucleotides and PCR primers used in the method the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The promoter
regulated promoters such as xylogenesis-specific promoters. The promoter polypeptides and their related polynucleotides are useful in the production of genetic constructs, used for modifying gene expression in production of genetic constructs, used for modifying gene expression in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTCCTTTGCTCGAGTCTCGCGGAAGAGAGAGAGAGGAGGAGGAGAAGAGATT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              creaeccarriaarrecacacacarcecccaaaarrarrerrerrecreccaraacrer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                  CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                    Length 3070;
                                                                                                                                                                                                                                                                 Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                                                                    100.0%; Score 657; DB 6;
100.0%; Pred. No. 3e-199;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGGTGTAGGGTCCAATATTT
                                                                                                                                                                                                                                                                                                                         Best Local Similarity 100.
Matches 657; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1259
                                                                                                                                                                                                                                                                                                                                                                          Н
                                                                                                                                                                                                                                                                                                                                                                                                         1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1079 cGAATTITCTCTTTTAGGTAAGTAACGAATGATGCGCCATGTTGACAAAAAGGCTGATTA 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a new isolated polynucleotide comprising the pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or a sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITICICICIAIAITICIGGITCACCGGITGGAAGICAATGGCAIGCGIGACGAAIGIACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arcarcaccagarcagccagraagagraararraarraacaaaragcrcrigraccaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGCGCCAACCCAAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATGATCTTGGAGTTGTTGGTAGAATTTGCAAGGTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1019 crdadeccarrraarrceadadecarcerceadaarrarrerrerreceardaerer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAATTITCICITITIAGGIAAGIAACCAATGAIGCGCCATGTIGACAAAAAGGCTGATIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                     New polynucleotide of the superubiquitin promoter from Pinus radiata, useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 3070;
                                          superubiquitin; promoter; gene expression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                       ĸ
                                                                                                                                                                                                                                                        Perera
                Eucalyptus grandis superubiquitin related sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 657; DB 10;
Pred. No. 3e-199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                        Visser ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ilarity 100.0%; Pred. No. 3e-
Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                Disclosure; SEQ ID NO 113; 123pp; English
                                                                                                                                                                                                                 GENESIS RES & DEV CORP LTD.
RUBICON FORESTS HOLDINGS LTD
                                                                                                                                                                                                                                                        Wood M, Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.08;
                                                                                                                                                                 30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                        30-APR-2002; 2002US-00137036
                                                                                                                                                                                                                                                                                  WPI; 2003-903678/82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity
657; Conserv
                                                 ds; Monterey pine;
transgenic plant.
                                                                                       Eucalyptus grandis.
                                                                                                                WO2003093475-A1
                                                                                                                                          13-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                            Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                      (GENE-)
                                                                                                                                                                                                                                    RUBI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
```

ö

9

1318

300

240

420

ADH75529 standard; DNA; 3070

RESULT 2 ADH75529 ADH75529

ო

```
WO200058474-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Promoter;
                                                                                                                                                                       1079
                                                                                                                                                                                                            1139
                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                 1379
                                                                                                                                                                                                                                                                                                                                                                                                     1439
                                                                                                                                                                                                                                                                                                                                                                                                                                           1499
                                                                                                                                 1019
                                                                                                                                                    61
                                                                                                                                                                                          121
                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAC62762;
                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
88888888
                                                                                                                            셤
                                                                                                                                                                   셤
                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                               ò
                                                                                                                                                    8
                                                                                                                                                                                         à
                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                  GAACCTCCACCACCATACCTCCACTTCAATCCCCACCATTTATTTATTTTCTCTCTGC 1618
TTTTCTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT 1498
                                    ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC 1558
                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (cOMT) promoter (ADW80462 or ADW80563). Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADW80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for
                                                                                                      New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                             657
                 ATTGGTGTAGGGTCCAATATTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                       GAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                             The invention relates to a novel isolated polynucleotide sequence
                                                                                                                                                                                                                                        plant; transcription; caffeic acid O-methyltransferase;
                                                                                                                                                                                                                     grandis caffeic acid O-methyltransferase cDNA SEQ ID NO:113.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 2; SEQ ID NO 113; 82pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENESIS RES & DEV CORP LTD. RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                      Location/Qualifiers
1. .1643
/*tag= a
1019. .1676
/*tag= b
                                                                                                                                                               踞.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                     99US-00276599.
99US-0146591P.
2000WO-NZ000018.
2000US-00598401.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001US-0345397P.
2002US-00137036.
2002US-00291447.
                                                                                                                                                               standard; cDNA; 3070
                                                                                                                                                                                                                                                                                                                                                                                    2003US-00702319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2002US-0425087P
                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2005-131806/14
                                                                                                                                                                                                                                                                     Eucalyptus grandis.
                                                                                                                                                                                                                                                   transgenic plant
                                                                                                                                                                                                                                                                                                                                                US2005026162-A1
                                                                                                                                                                                                                                                                                                                                                                                                                        24-FEB-2000;
20-JUN-2000;
28-NOV-2000;
09-NOV-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-APR-2002;
08-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                    06-NOV-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-NOV-2002;
                                                                                                                                                                                                   21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                      25-MAR-1999;
30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                  03-FEB-2005
1439
                                    1499
                                                                          1559
                                                                                                                                                                                                                                         wood;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perera R,
                  481
                                                                                                                                                               ADW80563
                                                                                             601
                                                                                                                                                                                 ADW80563;
                                                       541
                                                                                                                                                                                                                                                                                                                    promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (RUBI-)
                                                                                                                                                                                                                                                                                        Key
5'UTR
                                                                                                                                            RESULT 3
                                                                                                                                                       ADW80563
                                                                                                                                                               8
                                    유
                                                       à
                                                                    g
                                                                                            ઠે
```

```
1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1438
                                                                                                                                                                                                                                                                                                                                                                                                                   1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1199 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arrigergranderrarararringcegeaegerricereaaccecaaagriccrarararc 1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGAGCCATTTAATTTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1259 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481 ATTGGTGTAGGGTCCAATATTTTGCGGGGGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                     CGAATTTTCCTTTTAGGTAAGTAACCAATGATGACGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGCCCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGCCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                        GCCATAACTGT
identifying a gene responsible for a desired function or phenotype. composition and methods are useful for modifying gene expression or modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITCCITITGCICGAGICICGCGGAAGAGAGAGAGAGAGAGAGAGAGAAIGGGIT
                                                                                                                                                                                                                                        .
0
                                                                                                                                                                                           DB 14; Length 3070;
                                                                                                                                         Sequence 3070 BP; 829 A; 718.C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                           1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     eucalyptus; pine; gene transcription; ds.
                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        O-methyl transferase promoter coding sequence #1.
                                                                                                                                                                                      100.0%; Score 657; DB 14
100.0%; Pred. No. 3e-199;
                                                                                                                                                                                                                                      0; Mismatches
                                                                                               in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAC62762 standard; DNA; 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                  Best Local Similarity 100.
Matches 657; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eucalyptus grandis.
```

```
The invention relates to isolated promoter sequences from Pinus radiata and Bucalyptus grandis, comprising a sequence chosen from leaf-, root-, cand Eucalyptus grandis, comprising a sequence chosen from leaf-, root-, cand look and the sequence sequence temporally regulated promoters such as xylogenesis-specific promoters. The promoter copypeptides and their related polymucleotides are useful in the promoter constructs, used for modifying gene expression in a carget corganism, in particular a plant. The method is useful for modifying expression of a polymucleotide that comprises an intromadiativing growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional cloning of genes, in various assays to determine biological activity, to raise antibodies, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or other compounds, sequences ABKI7016-ABKI7015 represent Pinus radiata.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bucalyptus grandis polynucleotides and PCR primers used in the method
Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.
                                                                                                                                                                                                                                                                                                  Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; ss;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 638.2; DB 6;
Pred. No. 1.5e-193;
                                                                                                                                                                                                                                                                    Eucalyptus grandis promoter polynucleotide #6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GENE-) GENESIS RES & DEV CORP LTD.
(PLET-) FLETCHER CHALLENGE FORESTS IND LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lasham A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 1; Page 63-64; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eagleton C,
                                                                                                                                                              ABK17027 standard; cDNA; 661 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97.1%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-JUN-2001; 2001WO-NZ000115.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20-JUN-2000; 2000US-00598401
28-NOV-2000; 2000US-00724624
                                                                                                                                                                                                                                                                                                        Promoter; pine; leaf; root;
                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2002-114583/15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 654; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perera R, Rice S,
                                                                                                                                                                                                                                                                                                                                                                              Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the invention
                                       T 657
                                                                                                                                                                                                                                                                                                                                                                                                                  WO200198485-A1
                                                                          661 T 661
                                                                                                                                                                                                                                      26-MAR-2002
                                                                                                                                                                                                                                                                                                                                               PCR primer.
                                       657
                                                                                                                                                                                                     ABK17027;
                                                                                                                                  RESULT
                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
       음
                                        ઠે
                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACTCCGTATTTCTCTCCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arcarcacagarcescaeraageeraararraarraacaaaaraeererreraeeses 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTITICICICIATATICIGGIICACCGGIIGGAGICAAIGGCAIGCGIGACGAAIGI 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                                                                                                                                                         Novel promoter sequences useful for modulating transcription of plant DNA sequences of interest and production of polypeptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                             The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The sequences may also be used to tag or identify an organism or its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۳
ښ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 638.2; DB 3;
Pred. No. 1.5e-193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                  GENESIS RES & DEV CORP LTD.
FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                        Eagleton CK;
                                                                                                                                                                                                                                                                                                               Claim 1; Page 48; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97.1%;
98.9%;
                                                                              99US-00276599.
                                            24-FEB-2000; 2000WO-NZ000018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                         reproductive material
                                                                                                                                                                                        Perera R, Rice SJ,
                                                                                                                                                                                                                           WPI; 2000-647236/62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                 25-MAR-1999;
30-JUL-1999;
             05-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 654;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ч
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                    (GENE-)
(FLET-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
```

g ò g Š g ò g ò 9 9

g

g ò g ઠે ద ઠે 유 ઠે a õ ä

9 9 120 120

æ

g

ઠે 중 음

ઠે g ठ ద 8 g

g 8 a

ò

q

ઠે

g

ઠે

ò

```
AAGGCGCCAACCCCAGATTGCAAAGAGCACAAAAGAGCACGATCCAACCTTTCCTTAACAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATGATCTTGGAGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTCCGTATTTCTCTCACATTAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACAAATAGCTCTTGTACCGGG 300
                                                                                                 The invention relates to a new isolated polynucleotide comprising the Pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                               GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGTGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGGCGTGGATGT
                                                                                                                                                                                                                                                                                                         CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                             CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATCGAACCTCCACCACCATACCTCCACTTCAATCCCCACCATTTATCTTATTTCCT
                                                                                                                                                                                                                                                                                       CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCGAACCTCCACCACCATACCTCCATTCAATCCCCACCATTTATTTATTTCCT
                                                                                                                                                                                                                                                              Gaps
                                   radiata
                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                   Length 661;
                                  promoter from Pinus
target organism.
                                                                                                                                                                                                         Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                   DB 10;
                                                                                                                                                                                                                                   97.1%; Score 638.2; DB 10; 98.9%; Pred. No. 1.5e-193;
                                                                                                                                                                                                                                                            0; Mismatches
                                  polynucleotide of the superubiquitin ul in modifying gene expression in a
                                                                           Disclosure; SEQ ID NO 12; 123pp; English
                                                                                                                                                                                                                                                  Best Local Similarity 98.9
Matches 654; Conservative
           WPI; 2003-903678/82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                T 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           - [→
                                                                                                                                                                                                                                                                                          Н
                                                                                                                                                                                                                                                                                                                   Н
                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                657
                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 7
ADW80462
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                        ે
                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                   240
                                                                                                                                            240
                                                                                                                                                                      300
                                                                                                                                                                                              300
                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                            416
                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                 476
                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                     536
                                                                                                                                                                                                                                                                                                                                                                                                                                        596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099
                               CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                   241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                    ACATATTGGTGGGTCCAATATTTTGCGGGAGGGTTGGAACCGCAAGGTTCTATA
                                                               GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                               GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                   AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                ATCATCACCAGATCGGCCAGTAAGGGTAATATAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                         AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                  AACTCCGTATTTCTCTCTCACTTCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                              AGAGITITICICITATATICIGGITCACCGGITGGAGICAATGGCATGCGIGACGAATGI
                                                                                                                                                                                                                                                                                                                                                         AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                     ACATATTGGTGTTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCGAACCTCCACCACCATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATCGAACCTCCACCACACACACACACATCCCCACCATTTATCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   expression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       superubiquitin related sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ds; Monterey pine; superubiquitin; promoter; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Visser ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GENE-) GENESIS RES & DEV CORP LTD. (RUBI-) RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADH75428 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wood M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transgenic plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO2003093475-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        - [-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eucalyptús
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SJ,
                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                        537
                                                                                                                  181
                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           597
            61
                                     61
                                                               121
                                                                                        121
                                                                                                                                                                      241
                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                 417
                                                                                                                                                                                                                                                                                                                                                                                     477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               657
                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rice
```

240

300

180

476

480 536 540 596 900 959 9

240

300

180

360 360 416 420 476 476 536 600 600 600

```
121 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                               GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                            241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                   301 AACTCCGTATTTCTCTCTCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                        417 AGAGTITITCTCTCTATATICTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                     ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             537 TATCGAACCTCCACCATACCTCACTTCAATCCCCACATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 ATCATCACCAGATCGGCCAGTAAGGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                  301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      eucalyptus; pine; gene transcription; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    O-methyl transferase promoter coding sequence #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENESIS RES & DEV CORP LID.
FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eagleton CK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAC62810 standard; DNA; 2096 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-00276599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24-FEB-2000; 2000WO-NZ000018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perera R, Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-647236/62.
P-PSDB; AAB28142.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200058474-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              657 T 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-MAR-1999;
30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ·H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Promoter;
                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                         477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                       181
                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (FLET-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAC62810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                유
                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                           8
                                                                                     8
                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to a novel isolated polymuclectide sequence comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (cOMT) promoter (ADM80563). Also claimed is a genetic construct comprising the above polymucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADM80510), a host cell comprising the above genetic construct, a plant comprising the specific construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     creaeccarrraarrceaeaecacarcecccaaaarrarrcrrerrecreccaraacrer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                      grandis caffeic acid O-methyltransferase promoter SEQ ID NO:12
                                                                                                                                          wood; plant; transcription; caffeic acid O-methyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 14; Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97.1%; Score 638.2; DB 14; 98.9%; Pred. No. 1.5e-193; ive 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 2; SEQ ID NO 12; 82pp; English
                                                                                                                                                                                                                                    Location/Qualifiers
537. .543
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         & DEV CORP LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eagleton CK;
BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                      30-JUL-1999; 9903-0146591P.
24-FEB-2000; 2000WG-NZ000018.
20-JUN-2000; 2000US-00598401.
28-NOV-2000; 2000US-00754624.
99-NOV-2001; 2001US-0345397P.
30-ARC-2002; 2002US-0037036.
08-NOV-2002; 2002US-00294447.
                                                                                                                                                                                                                                                                                                                                                                                    2003US-00702319
                                                                                                                                                                                                                                                                                                                                                                                                                        99US-00276599
 ADW80462 standard; cDNA; 661
                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perera R, Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2005-131806/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                     Eucalyptus grandis.
                                                                                                                                                               transgenic plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RUBICON
                                                                                                                                                                                                                                                                                                                US2005026162-A1
                                                                                                                                                                                                                                                                                                                                                                                    36-NOV-2003;
                                                                          21-APR-2005
                                                                                                                                                                                                                                                       TATA_signal
                                                                                                                                                                                                                                                                                                                                                  3-FEB-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19
                                      ADW80462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (RUBI-)
```

8 6 8 6

```
Eucalyptus grandis promoter polynucleotide #31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            654;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٦
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              161
                                                                                                                                                                                     (FLET-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                    100
                                                                                                                                                                                                                           160
                                                                                                                                                                                                                                                                 220
                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                       280
                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                             340
                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                   400
                                                                                                                                                                                                                                                                                                                                                                                                                          460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 700
                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                       416
                                                                                                                                                                                                                                                                                                                                                                                                                                            476
                                                                                                                                                                                                                                                                                                                                                                                                                                                               520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                959
DNA
                                                                                                                                                                 9
                                              present invention relates to promoter sequences from eucalyptus and e. The present sequence is one such promoter. This sequence is useful modulating the transcription DNA sequences of interest. The ences may also be used to tag or identify an organism or its
Novel promoter sequences useful for modulating transcription of plant sequences of interest and production of polypeptides.
                                                                                                                                                                                    creadceartraarregagageacaregeceaaaarrarrerregreeracaraacrer
                                                                                                                                                                                                                                                                                                AAGGCGCCAACCCCAGATTGCAAAGGGCACAAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                       CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                        CGAATTTTCTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                           cgaartritcictrittaggraagraaccaargargcarcargrigacaaaaggcrgarra
                                                                                                                                                                                                                                              GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                 GTATGATCTTGGAGTTGTTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                    AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                          ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                AACTCCGTATTTCTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                              AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACATATTGGTGTGTGCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      521 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATCGAACCTCCACCATCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                             4;
                                                                                                                          Length 2096;
                                                                                                        Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                              Indels
                                                                                                                          Score 638.2; DB 3;
Pred. No. 2.6e-193;
0; Mismatches 3;
                            English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2096
                                                                                                                          97.1%;
98.9%;
                            Claim 1; Page 61-62; 93pp;
                                                                                                                                              Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA;
                                                                                     reproductive material
                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABK17075 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        701
                                                                             sequences may
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H
                                                                                                                                                                                     41
                                                                                                                                                                                                        61
                                                                                                                                                                                                                           101
                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                  161
                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                              281
                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                    341
                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                          401
                                                                                                                                                                                                                                                                                                                                                                                                                                            417
                                                                                                                                                                                                                                                                                                                                                                                                                                                               461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABK17075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         701
                                               The
                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABK1707
셤
                                                                                                                                                                                                       ò
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ଚ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 X X X E
                                                                                                                                                                 ò
```

(first entry)

26-MAR-2002

```
and Bucalyptus grandis, comprising a sequence chosen from leaf, root, flower. pollen, bud-, meristem-specific promoters or temporally regulated promoters such as xylogenesis specific promoters. The promoter polypeptides and their related polymuclectides are useful in the production of genetic constructs, used for modifying gene expression in a carget organism, in particular a plant. The method is useful for modifying expression of a polynuclectide that comprises an intron sequence, through removal of the intron sequence. The method is useful for modifying growth and development of plants, and callular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional cloning of genes, in various assays to determine biological activity, to caise antibodies, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABK17165 represent Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.
Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; ss;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                invention relates to isolated promoter sequences from Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97.1%; Score 638.2; DB 6;
98.9%; Pred. No. 2.6e-193;
cive 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FLETCHER CHALLENGE FORESTS IND LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eagleton C, Lasham A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GENE-) GENESIS RES & DEV CORP LID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Page 78; 121pp; English
                                                                                                                                                                                                                                                                                                                                 20-JUN-2001; 2001WO-NZ000115
                                                                                                                                                                                                                                                                                                                                                                                                  20-JUN-2000; 2000US-00598401
28-NOV-2000; 2000US-00724624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2002-114583/15.
P-PSDB; AAU80760.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perera R, Rice S,
                                                                                                                                       Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of the invention
                                                                                                                                                                                                       WO200198485-A1.
                                                                                                                                                                                                                                                                        27-DEC-2001
                                                                          PCR primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
```

Ø

ä

120

100

9

240

280 300 340 360 400 416 460 476 520 536

180 220

160

8 8

ద

g ⋩ 8 6 8 6

중 음

g ò

셤

∂

```
organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                       221 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAAGCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO:60.
                                                                                                                                                               CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGCTGCCGTAACTGT
                                                                                                                                                                                                               CGAATTTTCTCTCTTTTAGGTAAGTAACCAATGATGGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                 161 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                          AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                           ATCATCACCAGATGGGCCAGTAAGGGTAATATTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                         Arcarcacagarcaccagaraaccararararraarraacaaaraacrrrraraccaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        341 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGITITICICICIAIAITICIGGITICACCGGITIGGAGICAAIGGCAIGCGIGACGAAIGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGGCGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATATTGGTGTAGGGTCCAATATTTTGCGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCGAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                581 TATCGAACCTCCACCACCATACCTCAATCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACTCCGTATTTCTCTCCATTAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  transcription; caffeic acid O-methyltransferase;
                                                                              Length 2096;
                                                                                                                4.
                                               0 Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E. grandis caffeic acid O-methyltransferase related cDNA
                                                                                                              Indels
                                             Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U;
                                                                               10;
                                                                                                                 ٠.
۳
                                                                              Score 638.2; DB 10;
Pred. No. 2.6e-193;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADW80510 standard; cDNA; 2096
                                                                                 97.1%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eucalyptus grandis.
                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       plant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        657 T 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       wood;
                                                                                                                                                                                41
                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                             281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         641
                                                                                                                                                                                                               61
                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADW80510;
                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ន្តដ្ឋនូ
                                                                                                                                                                         g
                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   용
                                                                                                                                                 ò
                                 340
                                                                  360
                                                                                                                                416
                                                                                                                                                                                               476
                                                                                                                                                                                                                                                                536
                                                                                                                                                                                                                                                                                              580
                                                                                                                                                                                                                                                                                                                               596
                                                                                                                                                                                                                                                                                                                                                               640
                                                                                                                                                                                                                                                                                                                                                                                               959
                                                                                                                                                                                                                                                                                                                                                                                                                400
                                                                                                                                                               The invention relates to a new isolated polynucleotide comprising the Pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse esquence or inverted repeat or sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target
                                                                                                                                                                                                                                                                                    ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCTTTCCT
                         ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                  AACTCCGTATTTCTCTCTCCATTAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                AACTCCGTATTTCTCTCTCACTTCCATAAACCCCTGATTAATTTTGGTGGGAAAGCGACAGCC
                                                                                                                               AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                ACATATTGGTGTTGGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                               TATCGAACCTCCACCACCATACCTCCACTTCAATCCCCACCATTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ds; Monterey pine; superubiquitin; promoter; gene expression; transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New polynucleotide of the superubiquitin promoter from Pinus useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eucalyptus grandis superubiquitin related sequence #31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ж,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Visser ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; SEQ ID NO 60; 123pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENESIS RES & DEV CORP LTD.
RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rice SJ, Wood M, Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADH75476 standard; DNA; 2096 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2003-903678/82.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO2003093475-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              T 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-NOV-2003
                                                                                                                                                               401
                                281
                                                                  301
                                                                                                  341
                                                                                                                                361
                                                                                                                                                                                               417
                                                                                                                                                                                                                                 461
                                                                                                                                                                                                                                                                                              521
                                                                                                                                                                                                                                                                                                                               537
                                                                                                                                                                                                                                                                                                                                                               581
                                                                                                                                                                                                                                                                                                                                                                                               597
                                                                                                                                                                                                                                                                                                                                                                                                                               641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADH75476
                                                                                                                                                                                                                                                              477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (RUBI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
ADH75476
```

596 640 929 700

536

580 296 640

460 476 520 959

```
The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymucleotides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lignin biosynthetic gene and thereby alter the lignin content in plants, to modify properties such as callulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-0-methyl transferase (COMT) promoter that confers xylem-preferred gene expression
                           AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                              AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                  477 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAAACCCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                     TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCTTTATTTATTTCCT
                                                                                                                                                                                                                                                                                                                                  TATCGAACCTCCACCACCATACCTCCACTTCACCCCACCATTTATCCCTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                              crecrrrccrrrecrceagrerceggaagagagagagagagagagagagaareggr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eucalyptus grandis COMT promoter #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; SEQ ID NO 1; 32pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADQ88319 standard; DNA; 534 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-NOV-2003; 2003US-00703091.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-NOV-2002; 2002US-0428087P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Phillips J, Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (ARBO-) ARBORGEN LLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2004-552666/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2004146904-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in a plant cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-JUL-2004
  361
                                                                                              417
                                                                                                                                          461
                                                                                                                                                                                                                                      521
                                                                                                                                                                                                                                                                                   537
                                                                                                                                                                                                                                                                                                                                  581
                                                                                                                                                                                                                                                                                                                                                                                 597
                                                                                                                                                                                                                                                                                                                                                                                                                                641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADQ88319;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADQ88319

UD ADQ8

AC ADQ8

XX ADQ8

XX ADQ8

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX Calf

XX
                                요
                                                                                                                                g
                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                           ò
                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGCTGCCATAACTGT 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTCCGTATTTCTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (cOMT) promoter (ADM80462 or ADM80563). Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADM80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGCTGCCGTAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a novel isolated polynucleotide sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 14; Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97.1%; Score 638.2; DB 14, 98.9%; Pred. No. 2.6e-193; ive 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                              RES & DEV CORP LTD. FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 3; SEQ ID NO 60; 82pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eagleton CK;
                                                                                                                                                              99US-0146591P.
2000WO-NZ000018.
2000US-00598401.
2000US-00724624.
                                                                                                                                                                                                                                                          09-NOV-2001; 2001US-0345397P.
30-APR-2002; 2002US-00137036.
08-NOV-2002; 2002US-00291447.
                                                                                              2003US-00702319
                                                                                                                                                                                                                                                                                                                                  2002US-0425087P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2005-131806/14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                 GENESIS
US2005026162-A1
                                                                                                                                                              30-JUL-1999;
24-FEB-2000;
                                                                                                                                                                                                             20-JUN-2000;
28-NOV-2000;
                                                                                                                                                                                                                                                                                                         08-NOV-2002;
08-NOV-2002;
                                                                                           06-NOV-2003;
                                               03-FEB-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perera R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                       (RUBI-)
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
```

```
Transcription ; xylogenesis; gene expression ; transgenic plant; lignin ; cellulose; wood ; disease resistance;
                                                                              cellulose; wood ; disease resistance;
caffeic acid 3-O-methyl transferase promoter; COMT promoter ; xylem; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
```

```
English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eucalyptus grandis COMT promoter #3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADQ88321 standard; DNA; 306
                                          Claim 1; SEQ ID NO 2; 32pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGAA 485
                                                                                                                                                            in a plant cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-OCT-2004
                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    621
                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                                                                                                       321
                                                                                                                                                                                                                                                                                                                                                                          381
                                                                                                                                                                                                                                                                                                                                                                                                             441
                                                                                                                                                                                                                                                                                                                                                                                                                                               501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADQ88321;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
ò
                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ********
                                           ö
                                                                                                                                            211
                                                                                                                                                                   331
                                                                                                                                                                                     240
                                                                                                                                                                                                                  CTGATTAATTTGGTGGGAAAGCGACAGCCACCACAAAAGGTCAGATGTCATCACACAGA 300
                                                                                                                                                                                                                                                   511
                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                             571
                                                                                                                                                                                                                                                                                                                               480
                                                                                                               CAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAA 120
                                                                                                                                                                                                      CTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGA 391
                                                                                                                                                                                                                                        GAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGG 451
                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cellulose; wood; disease resistance;
caffeic acid 3-0-methyl transferase promoter; COMT promoter; xylem; ds
                                                                                                                                                                             AGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transcription; xylogenesis; gene expression; transgenic plant; lignin; cellulose; wood; disease resistance;
                                                                                             CAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCCAACCCAGATTGCAAAGAGCACAA
                                                                                                                                                                                                                                                                                            AGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGG
                                                                                                                                                                                                                                                                                                                               GTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATCC
                                                           92 ATGCGCCATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTG
                                                                           1 Argedecarerreacaaaaagecrearragrargarerregagriciregregaaarrre
                                                                                                                                AGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATA
                                                                                                                                                                   GTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATCC
                                           Gaps
                                                                                                                                                                                                                                                                                                                                                         CCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 534
                                                                                                                                                                                                                                                                                                                                               CCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                          ;
0
                         Length 534;
        BP; 151 A; 126 C; 119 G; 138 T; 0 U; 0 Other;
                                          Indels
                        Score 534; DB 13; I
Pred. No. 3.3e-160;
                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bucalyptus grandis COMT promoter #2.
                  81.3%; Scc.
100.0%; Pred
0; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-NOV-2003; 2003US-00703091
                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                            ADQ88320 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (ARBO-) ARBORGEN LLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2004-552666/53.
                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US2004146904-A1
        Sequence 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Phillips J,
                                                                                                                                                                                                                                                                                                                                                                                                                                              21-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-JUL-2004.
                                        534;
                                                                                              152
                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                             ADQ88320;
                        Query Match
                                                                                                               61
                                                                                                                                212
                                                                                                                                                  121
                                                                                                                                                                   272
                                                                                                                                                                                   181
                                                                                                                                                                                                     332
                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                        392
                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                          452
                                                                                                                                                                                                                                                                                                             512
                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                               572
                                                                                                                                                                                                                                                                                                                                                                481
                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                         ž g
                                                                        요
                                                                                             ò
                                                                                                           g
                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                           8 &
                                                                                                                                                            6 8 6
                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                      8 6
                                                                                                                                                                                                                                                                   8 6
                                                                                                                                                                                                                                                                                                      ठे
                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                           용
```

```
The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymucleotides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lignin biosynthetic gene and thereby alter the lignin content in plants, to modify properties such as cellulose synthesis, wood development, flower development and disease resistance. The present sequence is Bucalyptus grandis caffeic acid 3-0-methyl transferase (COMT) promoter that confers xylem-preferred gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACTICAATCCCCACCATTATCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141 GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 Grecaaartrecaaecreacearescenceseseaartraaseceeaacecaares
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201 AAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAAACCCCACAAAAGGTCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCATAAACCCCTGATTAATTTTGGTGGGAAAGCGACAGCCAAACCTCACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGCGGGAGGGTTGGTGAACCGCAAGTTCCTATATATCGAACCTCCACCACCATACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 73.8%; Score 485; DB 13; Length 485; Best Local Similarity 100.0%; Pred. No. 1.6e-144; Matches 485; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 485 BP; 138 A; 120 C; 105 G; 122 T; 0 U; 0 Other;
```

(first entry)

```
New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                   cellulose; wood; disease resistance;
caffeic acid 3-0-methyl transferase promoter; COMT promoter; xylem; ds.
                                                                                                                              Transcription; xylogenesis; gene expression; transgenic plant; lignin;
                                                                                          Eucalyptus grandis COMT promoter #4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; SEQ ID NO 4; 32pp; English.
                                                                                                                                                                                                                                                                                                                         07-NOV-2003; 2003US-00703091
                                                                                                                                                                                                                                                                                                                                                              21-NOV-2002; 2002US-0428087P.
                                                                                                                                                                                                                                                                                                                                                                                                  (ARBO-) ARBORGEN LLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2004-552666/53.
                                                                                                                                                                                                         Eucalyptus grandis.
                                                                                                                                                                                                                                              US2004146904-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                     Phillips J,
                                                     21-OCT-2004
                                                                                                                                                                                                                                                                                   29-JUL-2004
                 ADQ88322;
ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymocleotides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lignin biosynthetic gene and thereby alter the lignin content in plants, to modify properties such as callulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-0-methyl transferase (COMT) promoter that confers xylem-preferred gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCACTICAAICCCCACCATITAICCGITITIAITICCTCTGCTTTCCTTTGCTCGAGTCTC 300
                                                                                                                                                                                                                                                                                                                                                                              New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                     dB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCACTTCAATCCCCACCATTATCCGTTTAATTCCTCTGCTTTCCTTTGCTCGAGTCTC
gene expression; transgenic plant; lignin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rrricceceaecerrecreaaccecaaerrecrarararceaaecrecaccaccarace
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
               cellulose; wood; disease resistance;
caffeic acid 3-0-methyl transferase promoter; COMT promoter; xylem;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 306 BP; 80 A; 73 C; 70 G; 83 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46.6%; Score 306; DB 13;
100.0%; Pred. No. 3.1e-87;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; SEQ ID NO 3; 32pp; English.
                                                                                                                                                                                     07-NOV-2003; 2003US-00703091
                                                                                                                                                                                                                          21-NOV-2002; 2002US-0428087P.
Transcription; xylogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        306; Conservative
                                                                                                                                                                                                                                                                                                     Eagleton
                                                                                                                                                                                                                                                                (ARBO-) ARBORGEN LLC.
                                                                                                                                                                                                                                                                                                                                           WPI; 2004-552666/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     306
                                                                        Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                            US2004146904-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in a plant cell
                                                                                                                                                                                                                                                                                                   Phillips J,
                                                                                                                                               29-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
```

g ð

ò 요 ઠ a δ 셤 ઠે

ပဲ

Eagleton

```
ö
The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymucleotides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lignin biosynthetic gene and thereby alter the lignin content in plants, to modify properties such as cellulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-0-methyl transferase (COMT) promoter that confers xylem-preferred gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333 TGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 rearraarrregregesaaaccaccaccaccaccacaaaccreaaaccacaarcarccaccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGGIGAACCGCAAAGTICCIATATATCGAACCICCACCACCAIACCICACTICAAICCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACCATITATCCGTTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCATITIATCCGCTITIATITICCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 293;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 293 BP; 76 A; 67 C; 70 G; 80 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 100.0%; Pred. No. 4.4e-83;
Matches 293; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                     in a plant cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
```

ADQ88322 standard; DNA; 293

ADQ88322

ò

Search completed: November 1, 2006, 00:21:19 Job time: 280.948 secs

BX250092 BX250092 AZ592362 1M0403A17 BZ076780 lkf74g10. AZ058431 RPCI-23-4

AZ440830 1M0232P06 DW345288 PP_LEC002 AG844971 Oryza sat BZ280453 CH230-309

nucleic

₹

. Н

Run

Sequence:

```
AZO01211 RPCI-23-3
CR192806 Reverse B
AZ46094 1M0266C08
CE081925 tigr-gss-
AG482398 Mus muscu-
CNS3141 UI-M-HQ0-
BM310931 AGENCOURT
BZ117558 CH230-460
AK079471 Mus muscu
BQ103940 gg0575.e
BG803750 0241-38 M
AG562107 Mus muscu
AZ384008 1M0141D19
                                          AV368360 AV368360
DT726802 EST116065
DW103368 CLPZ739.b
AL351208 Tetraodon
CO910517 BJ03007C0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Laurasiatheria, Carnivora, Fissipedia, Canidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genomics, TIGR, 9712 Medical Center Drive,
                                                                                                                                                                                                                                                                                                                                                                                      561 bp DNA linear GSS 30-SEP-200 tigr-gss-dog-17000330896927 Dog Library Canis familiaris genomic, grannis survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 561)
Kirkness, E.F., Bafna, V., Halpern, A.L., Levy, S., Remington, K. Rusch, D.B., Delcher, A.L., Pop, M., Wang, W., Fraser, C.M. and Venter, J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:9615"
/clone_lib="bog_Library"
/note="Site_l: BstXI; Libraries were prepared from
peripheral_blood"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The dog genome: survey sequencing and comparative analysis Science 301 (5641), 1898-1903 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 561;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 47.6; DB 12;
Pred. No. 0.015;
0; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Canis familiaris"
/mol_type="genomic DNA"
/strain="Standard Poodle"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Kirkness EF
The Institute for Genomic Research
Department of Eukaryotic Genomics, T3
Rockville, MD 20850, USA
Tel: 301-838-0208
Fax: 301-838-0208
Email: ekirknes@tigr.org
                                                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                    AZ592362
BZ076780
                                           AV368360
DT726802
DW103368
CNS05RZJ
CO910517
                                                                                                     AZ440830
DW345288
AG844971
BZ280453
AZ001211
CAC001211
CE081925
AG482398
                                                                                                                                                                                                               CN531411
BM800931
BZ117558
AK079471
BQ103940
BG803750
AG562107
AZ384008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CE792380.1 GI:37133144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canis familiaris (dog)
Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 7.2%;
Best Local Similarity 62.7%;
Matches 74; Conservative (
                                                                                                                                                                                                                                        1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Class: shotgun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14512627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canis.
                                                                                                                                                                                                                43.6
                                                                                                                                                                                                       43.
                                                                                                                                                                 43.
                                                                                                                                                                                         43.
                                                                                                                   43
                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                            RESULT 1
CE792380/c
                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CE792380 tigr-gss-BZ731304 OGFBZ50TC AG559107 Mus muscu DT310002 JGI CAAXI BB931786 BB931786 CK600115 AGENCOURT AZ829144 2M0106C09 DV761691 PChrcSEQ00 DW344263 PP_LCC001 AG403694 Mus muscu DT234659 JGI CAATE BZ708983 OGEĀW43TM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hp46c12.g
OGWFD96TV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OGWAX91TV
1M0103G20
Anopheles
OGWCY78TV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hx41a10.b
                                                                                            (without alignments)
17207.024 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                October 31, 2006, 23:29:19 ; Search time 2135.12 Seconds
                                                                                                                                                       657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AZ829144
DW3442691
DW3442691
DW3442691
DW344691
AG403694
BZ703638
BZ70838
BZ306338
CCG241281
CCG241281
CCG241281
CCG241328
                                                                                                                                                      ctgagccatttaattcgaga.....aggagagagagaatgggtt
                                                                                                                                                                                                                                         96473596
           GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                 48236798 segs, 27959665780 residues
                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                            US-10-702-319A-113_COPY_1019_1675
657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BB931786
CK600115
AZ829144
DW344263
DW344263
DW344263
BZ708983
BZ708983
BZ708983
BZ708983
CC693540
CC693540
CCC69328
CCNS01JUK
CC671328
                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                         nucleic search, using sw model
                                                                                                                                                                                         Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                 seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                589
675
1019
771
                                                                                                                                                                              IDENTITY NUC
                       Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
                                                                                                                                                                                                                                                                                                                                                    EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              466.6
455.8
455.8
455.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                            Perfect score:
```

Minimum DB Maximum DB

Database

Searched:

GSS 30-SEP-2003

ö

Gaps

ö

υ

Result ě

U

```
GI:48319805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /sex="male"
                                                                                                                                                                                                      (bases 1 to 831)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               : EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1, .831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dedericere 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      510 GGGTTGGTG 518
                                                                                                                                                                                                                                                                                                                                                                                                              Sequencing: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                        Vector
R.Site 1
R.Site 2
AG559107.1
                                                                                                                                                                                           15574823
                                                                                                                                                                                                                                                                                                                                                                                                   PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 4
DT310002/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                JOURNAL
PUBMED
REFERENCE
AUTHORS
                            SOURCE
ORGANISM
                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                         REFERENCE
                                                                                                     AUTHORS
  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus molossinus DNA, clone:MSMg01-477N16.T7, genomic survey sequence.
AG559107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300 GAACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAAGCGACAGC 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       760 bp DNA linear GSS 03-MAR-2003 OGFBZ50TC ZM_0.7_1.5_KB Zea mays genomic clone ZMMBMa0249J04, pg29110.
                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.

1 (bases 1 to 76e)
Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T., Resnick, A., Fraeer, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T., Citek, R., Nunberg, A., Robbins, D. and Lakey, N.
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                          CTCCGTATTTCTCTCACTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAA 362
                                                                   4 daggitötingingiangronnanahanaktos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol type="genomic DNA"
/strain="B73"
/db xref="taxon:4577"
/clone="zwmBwa0249104"
/clone=lib="zM_0.7 1.5 kB"
/note="Vector: pBCSK-; Site 1: HincII; 0.7-1.5 kb
methylation filtered genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7.2%; Score 47.4; DB 12; Length 760; 62.0%; Pred. No. 0.018; ative 0; Mismatches 46; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                   9712 Medical Center Drive, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                      Tel: 301-838-5843
Fax: 301-838-0208
Email: whitelaw@tigr.org
Seg primer: TF
Class: methylation filtered.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                   Other GSSB: OGFBZ50TM
Contact: Cathy Whitelaw
IIGR
                                                                                                                                                                                                                 BZ731304.1 GI:28705008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                               Zea mays
Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420 G 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G 124
                            303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
AG559107
                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
COMMENT
                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                            RESULT 2
BZ731304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                     셤
                                                                             ò
                                                  용
                             ਨੇ
```

```
The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DT310002

G19 bp mRNA linear EST 19-AUG-2005
JGI_CAAXI533.rev CAAX Pimephales promelas testis 7-8 month adults,
males and females pooled (L) Pimephales promelas cDNA clone
CAAXI533 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  450 GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTGCGGGA 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    339 cigrirngickornockickarakinginininininingicarcancincheringco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ಭ
                                                                                                                                                                                                                                                                                      Abe,K., Noguchi,H., Tagawa,K., Yuzurtha,M., Toyoda,A., Kojima,T., Bzawa,K., Saitou,N., Hattori,M., Sakaki,Y., Moriwaki,K. and Shiroishi,T. Contribution of Asian mouse subspecies Mus musculus molossinus to genomic constitution of strain C57BL/6J, as defined by BAC-end sequence-SNP analysis
                                                                                       Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             390 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 7.1%; Score 46.6; DB 14; Length 831; Best Local Similarity 58.9%; Pred. No. 0.033; Matches 76; Conservative 0; Mismatches 53; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue type="mixture of kidney and spleen" /clone_lib="MSWg01 Mouse Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Mus musculus molossinus"
Mus musculus molossinus (Japanese wild mouse)
Mus musculus molossinus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome Res. 14 (12), 2439-2447 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol type="genomic DNA"
/sub_species="molossinus"
/db_xref="taxon:57486"
/clone="MSMg01-477N16.T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : pBACe3.6
: EcoRI
```

```
CK600115
CK600115.1 GI:41113272
                   Trifolium pratense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                  1. 349
                                                                                                              Trifolium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Simi
Matches 71;
                                                                                                                                                                                                                                                                                                                                                                  Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CK600115/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
                                                                                                                                REFERENCE
                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
KEYWORDS
                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 6
                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                      Email: cdnadjgi-psf.org

CDNA Library Preparation: DOB Joint Genome Institute:

http://www.jgi.doe.gov

DNA Sequencing: DOB Joint Genome Institute: http://www.jgi.doe.gov

DNA Sequencing: BST name is generated by the concatenation of

the JGT Clone Id and the direction of sequencing. The suffix '.rev'

indicates a reverse sequencing read of the insert. It does not

necessarily reflect the orientation of the insert.

Poly-A: Based upon the presence of a run of 14 or more T residues

at the beginning of the sequence, this clone was polyadenylated.

The resulting Poly-T sequence has been removed.

Plate: CAAX 0013 row: j column: 24

High quality sequence stop: 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST 29-JAN-2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     214 TGTTCCAGTTCCGGGAAAAGAGACAGCCAACCAACTCCAGACCAAACACCTGAGAGAG 155
                                                     Pimephales promelas
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Ectinopterygii; Neopterygii; Teleostei; Ostariophysi;
Cypriniformes; Cyprinidae; Pimephales.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33 TGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  349 bp mRNA linear EST 29-JAN BB931786 Trifolium pratense three week-old plant SSR-enriched library Trifolium pratense cDNA clone RCC03640, mRNA sequence. BB931786 BB931786.1 GI:86120577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                Brokstein, P. and Lindquist, B.A.

DOB Joint Genome Institute Pimephales promelas EST project Unpublished (2005)

Other_ESTS: JGI CAAXIS33.fwd

Contact: Lindquist, E.A., Richardson, P.

DOB Joint Genome Institute

2800 Mitchell Drive, Walnut Creek, CA 94598, USA
                                                                                                                                                    Richardson, P., Lucas, S., Rokhsar, D., Detter, J.C., Ng, D.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 7.1%; Score 46.4; DB 10; Length 619; Best Local Similarity 70.5%; Pred. No. 0.035; Matches 62; Conservative 0; Mismatches 26; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Pimephales promelas"
/mol_type="mRNA"
/db xref="taxon:90988"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154 AGAGAGAGAGAGAGAGAGAGAGAGAG 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             393 AGAGAGAGAGAGAGAGAGAGAGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone="CAAX1533"
DT310002.1 GI:73650665
                                   Pimephales promelas
                                                                                                                                                                                                                                                                                                       rel: 925 296 5600
Fax: 925 296 5710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POLYA=Yes.
               KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                          JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BB931786
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                      TITLE
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
```

```
Contact: Erika Asamizu
The First Laboratory for Plant Gene Research
Kazusa DNA Research Institute
Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Email: asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 22-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    292
Trifolium pratense
Mukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosid I; Fabales; Fabaceae; Papilionoideae; Trifolieae;
                                                                                                                                             1 (bases 1 to 349)
Sato, S., Isobe, S., Asamizu, E., Nakamura, Y., Ohmido, N., Sakurai, N.,
Sato, S., Isobe, S., Mada, T., Watanabe, A. and Tabata, S.
Comprehensive structural analysis of the genome of red clover
(Trifolium pratense)
Unpublished (2006)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Buarchontoglires, Glires, Rodentia, Sciurognathi, Muroidea, Muridae, Murinae, Rattus.

1 (bases 1 to 799)

11H-MGC http://mgc.ncl.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /dev.stage="three week-old plant"
/clone_lib="Trifolium pratense three week-old plant
/SR.enriched library"
/note="vector: pT7Blue T-Vector; Site_1: EcoRV; variety:
Hokuseki"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                National Cancer Institute / NIH
Bldg. 31 Rm10A07 Bethesda, MD 20892
Email: GapDbs-remail.nih.gov
Tissue Procurement: Howard Jacobs
CDNA Library Preparation: Express Genomics
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CK600115
AGENCOURT 17895063 NIH MGC_234 Rattus norvegicus cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   407 AGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATG 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Trifolium pratense"
|mol_type="mkny"
|db_xref="texon:57577"
|clone="RCC03640"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       n 7.0%; Score 45.8; DB 7 Similarity 62.8%; Pred. No. 0.046; 71; Conservative 0; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Daniela S. Gerhard, Ph.D.
Office of Cancer Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus (Norway rat)
```

```
POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sedneuce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DV761691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
DEFINITION
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DV761691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                     /clone='Indexcillation'
/clone='Indexcillation'
/clone='Indexcillation'
/tissue_type="heart, pooled"
/tissue_type="heart, pooled"
/tissue_type="heart, pooled"
/clone=lib="NHH MGC_234"
/clone=lib="NHH MGC_234"
/note="Organ: heart; Vector: pExpress-1; Site_1: EcoRV;
Site_2: Not1; RNA obtained from pooled heart fissue from a mix of male and female animals at 8 wk old. Tissues were snap-frozen and kept at -80c for two days before RNA extraction and purification (Tri-reagent method). cDNA was primed using oligo-dT primer:
5. pGACTACTAGATCGCGAGCGCCCCC(T) 25-3' and cloned into the EcoRV/Not1 sites of pExpress-1. Size-selection >1.4kb resulted in an average insert size of 2.2 kb. This primary library is normalized (non-normalized primary library is NIH MGC_233) and was constructed by Express Genomics (FrederIck, MD). Note: this is a NIH_MGC_library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus (house mouse)

Mus musculus

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;

Sciurognathi; Murcidea; Muridae; Mus.

1 (Dases 1 to 589)

S Dunn,D., Aoyagi,A., Barber,M., Beacorn,T., Duval,B., Hamil,C.,

Islam,H., Longacre,S., Mahmoud,M., Meenen,E., Pedersen,T.,

Reilly,M., Rose,M., Rose,R., Stokes,R., Tingey,A., von

Niederhausern,A. and Wright,D.,Weiss,R.

Mouse whole genome scaffolding with paired end reads from 10kb

plasmid inserts

Unpublished (2000)

Contact: Robert B. Weiss

University of Utah Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biomedical Polymers Research Bldg., 20 S. 2030 E., SLC, UT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AZB29144
2M0106C09R Mouse 10kb plasmid UUGC1M library Mus musculus genomic clone UUGC2M0106C09 R, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        435 TCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGAATGTACATATTGGTGTAG 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          662 gcradrancrodrinderdriancecerricerecranicanteredare 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ch
1 Similarity 61.2%; Pred. No. 0.056;
71; Conservative 0; Mismatches 45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: ddunn@genetics.utah.edu
Insert Length: 10000 Std Error: 0.00
Plate: 0106 row: C column: 09
Seg primer: CACACAGGAAACAGCTATGACC
Class: plasmid ends
                                                                                            /organism="Rattus norvegicus"
/mol_type="mRNA"
/db_xref="taxon:10116"
       21
       column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        High quality sequence stop: 589.
Location/Qualifiers
    Plate: LLAM15046 row: k column
High quality sequence stop: 641.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AZ829144.1 GI:12999052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: 801 585 5606
Fax: 801 585 7177
Email: ddunn@genet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unive
Rm. 308, Bic
USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S:
Matches 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AZ829144/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                      PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
```

ð 엄 ઠ 셤

```
/lab_host="E. Coli strain XL10-Gold, T1-resistant, F-"
/lab_host="E. Coli strain XL10-Gold, T1-resistant, F-"
/clone lib="Mouse 10kb plasmid UUGCIM library"
/clone="Weetor: PWD42nv; Purified genomic DNA from M.
musculus C57BL/6J (male) was obtained from the Jackson
Laboratory Mouse DNA Resource
(http://www.jax.org/resources/documents/dnares/). The DNA
was hydrodynamically sheared by repeated passage through a
0.005 inch orifice at constant velocity. The sheared DNA
was blunt end-repaired with T4 DNA polymerase and T4
polymucleotide kinase. Adaptor oligonucleotides were
jolymucleotide kinase. Adaptor oligonucleotides were
ligated to the blunt ends in high molar excess. The
adaptored DNA was purified and size-selected for a 9.5 to
10.5 kb range using preparative agarose gfrom a derivative
of pwM42 (gi|4732114|gb|AR129072.1), a copy-unmber
inducible derivative of plasmid R1. The vector was ligated
with adaptors complementary to the insert adaptors and
purified. The sheared, adaptored mouse DNA was annealed to
adaptored vector DNA, and transformed into
chemically-competent E. coli XL10-Gold (stratagene) cells
and selected for ampicillin resistance."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Phanerochaete chrysosporium (anamorph: Sporotrichum pruinosum)
Phanerochaete chrysosporium
Bukaryota; Fungi; Basidiomycota; Hymenomycetes; Homobasidiomycetes;
Aphyllophorales; Corticiaceae; Phanerochaete.
Tangs 1 to 675
Teams, R and Butler, G.
Expressed sequence tags from Phanerochaete chrysosporium cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DV761691 675 bp mRNA linear EST 22-NOV-2005 PchrSEQ004644 Phanerochaete chrysosporium pBluescript (ECCRI-XhoI) Phanerochaete chrysosporium cDNA clone PchrSEQ004644, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              329 CCCCTGATTAATTTGGTGGGAAAGCGACAGCCAAACCCACAAAAGGTCAGATGTCATCCCA 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7411 Sherbrooke Street West, SP545-1, Montreal, QC H4B1R6, Canada Tel: 514 848 2424 3405 Fax: 514 848 4504 Email: tsang@vax2.concordia.ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        585 Crcchigcaalcaccadhgagcangngcchrcaaalcagacaaacrcagacacrchcacr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels

    .675
/organism="Phanerochaete chrysosporium"
/mol_type="mRNA"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Centre for Structural and Functional Genomics Concordia University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6.9%; Score 45.6; DB 11;
ilarity 68.5%; Pred. No. 0.059;
Conservative 0; Mismatches 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Mus musculus"
                              /mol_type="genomic DNA"
/strain="C57BL/6J"
                                                                                               /db_xref="taxon:10090"
/clone="UUGC2M0106C09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DV761691.1 GI:82605802
                                                                                                                                                                 /sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Tsang A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
```

504

```
Discrete to 771)

B attori,M., Toyoda,A., Noguchi,H., Kojima,T. and Sakaki,Y.
B Hattori,M., Toyoda,A., Noguchi,H., Kojima,T. and Sakaki,Y.
Direct Submission

Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical
Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical
and Chemical Research (RIKEN), Genomic Sciences Center (GSC);
1-7-22 Subhiro-chou,Taurumi,ku, Yokohama, Kanagawa, 230-0045, Japan
(E-mail:hattori@gsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/,
Tel:81-45-503-9111, Fax:81-45-503-9170)
Clones are derived from the mouse BAC library MSMg01. For BAC
library availability, please contact Kuniya Abe (abe@rtc.riken.jp).
Tsukuba Institute of Physical and Chemical Research (RIKEN) 3-1-1
Koyadai, Tsukuba, 305-0074 Japan
phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                               AG403694 171 bp DNA linear GSS 21-DEC-2004
Mus musculus molossinus DNA, clone:MSMg01-261E01.TJ, genomic survey
                                       813 certricreretricreretraadacacreachaatreacergegerecardaatreer 872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Abe, K., Noguchi, H., Tagawa, K., Yuzuriha, M., Toyoda, A., Kojima, T., Ezawa, K., Saitou, N., Hattori, M., Sakaki, Y., Moriwaki, K. and Shiroishi, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contribution of Asian mouse subspecies Mus musculus molossinus genomic constitution of strain C57BL/6J, as defined by BAC-end
  445 CGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTGGGTCCAATATTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACC 445
                                                                                                                                                                                                                                                                                                                                                                                                                               Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, But
Mammalia, Butheria, Euarchontoglires, Glires, Rodentia,
Sciurognathi, Muroidea, Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 14; Length 771;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue type="mixture of kidney and spleen
/clone_lib="MSMg01 Mouse Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus molossinus (Japanese wild mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Mus musculus molossinus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.8%; Score 44.8; DB
87.5%; Pred. No. 0.11;
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bequence-SNP analysis
Genome Res. 14 (12), 2439-2447 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="genomic DNA"
/sub_species="molossinus"
/db_xref="taxon:57486"
/clone="MSMg01-261E01.TJ"
                                                                                         526
                                                                                                                                 873 CATAAAGCTAGATCAACAACAA 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                         505 CGGGAGGGTTGGTGAACCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus molossinus
                                                                                                                                                                                                                                                                                                                                        GI:48046380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : pBACe3.6
: EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing : TJ
LIBRARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                           AG403694.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R.Site 1
R.Site 2
                                                                                                                                                                                                                                                                                                sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15574823
                                                                                                                                                                                                                                                                                                                     AG403694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bource
                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                       RESULT 10
AG403694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                       g
                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                         ઠ
    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 09-JAN-2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryophyta; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Wiridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; core eudicotyledons; core eudicotyledons; (bases I; Rosales; Rosaceae; Amygdaloideae; Prunus. (bases I to 1019)
Jebott,A., Zhebentyayeva,T., Main,D., Jung,S., Staton,M., Peach Model Genome for Rosaceae Shoot ESTs
Unpublished (2006)
Contact: Abbott,A.
Dept of Genetics and Biochemistry
                                                                                                                                                                                                                                                                                                                     449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   444
                                                                                      /note="Vector: pBluescript KS+; Site_1: XhoI; Site_2: ScoRi, ded, double-stranded cDNA. The EcoRI-XhoI-digested cDNA was ligated with EcoRI-XhoI-digested pBluescript KS+ (Invitrogen Corp). "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           59 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGCTCTCCTCGATACTCTACTCTACCACCTAT 118
                                                                                                                                                                                                                                                                                                                                                                                                            450 GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGG 508
                                                                                                                                                                                                                                                                                                                                                                                                                                             119 TCTGACCATGGCAGACCTACGAAAGCCGAGACGGGGCGTCTTCAAGGTTCTGAAGG 177
                                                                                                                                                                                                                                                                                                                     390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTITITCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 385 CCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCAC
                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
/clone="PchrSEQ004644"
/lab host="B. coli"
/clone lib="Phanerochaete chrysosporium pBluescript
(EcoRI-Xhol)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone lib="Peach shoot"
/note="Vector: pBluescript II SK(-); Site_1: EcoRI;
Site_2: XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                122 Long Hall, Clemson University, Clemson, SC 29634, USA Tel: 864 656 3060
Fax: 864 656 6879
                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                          6.9%; Score 45.4; DB 10; Length 675; 61.3%; Pred. No. 0.071; tive 0; Mismatches 46; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PD_LEC0018L04f Peach shoot Prunus persica cDNA clone PP_LEC0018L04f, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 10; Length 1019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.8%; Score 45; DB 1
57.0%; Pred. No. 0.1;
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Prunus persica"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: TAATACGACTCACTATAGGG
High quality sequence stop: 1019.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cotal High Quality bases = 801
Seq primer: TAATACGACTCACTATAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                db_xref="taxon:3760"
/clone="PP_LEC0018L04f"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'tissue_type="Shoot"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /lab host="E. coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="mRNA"
/cultivar="Loring"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: aalbert@clemson.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DW344263.1 GI:84630653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Prunus persica (peach)
Prunus persica
                                                                                                                                                                                                                                                                         73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . .1019
                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
Matches 81; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST.
                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 9
DW344263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                용
                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
```

ဌ

Euteleostomi;

ö

Gaps

; 0

```
BZ306338 10-2002 10-2002 10-2002 10-2002 10-2002 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-2003 10-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zea mays

Zea mays

Zea mays

Zea mays

Zea mays

Zea ways

Zea ways

Zea mays

Zea mays

Zea mays

Zea nicoideae; Andropogoneae; Zea ni (Dases 1 to 52)

Zea nicoideae; Andropogoneae; Zea ni (Dases 1 to 52)

Zea ni (Dases 1 to 52)

Zea ni (Dases 1 to 52)

Zea ni (Dases 1 to 52)

Zea ni (Dases 1 to 52)

Zea ni (Dases 1 to 52)

Zea ni (Dases 1 to 52)

Zea ni (Dases 1 to 52)

Zea ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase ni (Dase n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               306 cenariticicicacaricaniaaaccecridariaaritideregaaaaceaacec 365
OGEAW43TM ZM 0.7 1.5 KB Zea mays genomic clone ZMMBMa0220H13, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                      wear wears because the streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.

1 (bases 1 to 363)

Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T., Resnick, A., Nunberg, A., Budiman, M.A., Bedell, J.A., Rohlfing, T., Citek, R.W., Nunberg, A., Robbins, D. and Lakey, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              271 Cdirgiigiaferciiaratatacrogidcaaaraardardraagaacdacdecro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="taxon:4577"
/clone="ZMMBMa0220H13"
/clone="Lb="ZM" 0.7 1.5 KB"
/clone="Vector: pBCSK-; Site 1: HincII; 0.7-1.5
methylation filtered genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 363;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9712 Medical Center Drive, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6.8%; Score 44.6; DB 12;
61.7%; Pred. No. 0.1;
tive 0; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Zea mays"
/mol_type="genomic DNA"
/strain="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seg primer: TR
Class: methylation filtered.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BZ306338
BZ306338.1 GI:24659045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Cathy Whitelaw
                                                                                                                                                                                                                                         BZ708983.1 GI:28429079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (2002)
Other GSSs: OGEAW43TC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 61.74
Matches 71; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 301-838-5843
Fax: 301-838-0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zea mays
                                                                                                                                                                                                                                                                                                                                 Zea mays
Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
BZ306338
LOCUS
                RESULT 12
BZ708983/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                          EST:

Pimephales promelas

Pimephales promelas

Pimephales promelas

Pimephales promelas

Pimephales promelas

Pukaryota; Meazzoa: Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygi; Neopterygi; Teleoste; Ostariophysi;

Cypriniformes; Cyprinidae; Pimephales.

I (Bases I to 778)

E i (Bases I to 778)

Richardson,P., Iuras,S., Rokhsar,D., Detter,J.C., Ng,D.C.,

Brokstein,P. and Lindquist,E.A.

Brokstein,P. and Lindquist,E.A.

DOB Joint Genome Institute Pimephales promelas EST project

Unpublished (2005)

Other_ESTS: JGI CAAT2286 fwd

Contact: Lindquist,E.A., Richardson,P.

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Joint Genome Institute:

DOB Join
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ô
                                                                      JGI CAAT8286.rev CAAT Pimephales promelas brain 7-8 month adults, males and females pooled (M) Pimephales promelas cDNA clone CAAT8286 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  h 6.8%; Score 44.8; DB 10; Length 778; Similarity 64.4%; Pred. No. 0.11; 67; Conservative 0; Mismatches 37; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      405 AGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGT 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135 AGAGAGAGAGAGAGGGTTGGTCTTTGAAGTCTTTGTGGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                            DT234659.1 GI:73504794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S:
Matches 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     345
                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                             RESULT 11
DT234659/c
LOCUS
                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
```

ö

0; Gaps

```
/lab host="JM107 or DH5a"
/clone_lib="WGS-Zmay9F (JM107 adapted methyl filtered)"
/clone_lib="WGS-Zmay9F (JM107 adapted methyl filtered)"
/note="Organ: immature ears; Site_1: Xba 1;
The vector was digested with XbaI and one nucleoTide was added by fill in in the recessive 3' end. The genomic DNA was nebulized, end repaired, adaptor ligated and size fractionared using sephadex. The resulting fragments were between 0.8 and 3 kb and were cloned into the vector (.x/y reads in M13mpl9, .b/g reads in pUC19). The same ligation was transformed in either JM107 or DH5a. "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CC693540 669 bp DNA linear GSS 19-JUN-2003 OGWFD96TV ZM 0.7_1.5_KB Zea mays genomic clone ZMMBMa0564024, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   306 CGTATTTCTCTCCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCC 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 297 cerrerrerrerrarararacresresaaraarearerreareareareaceacresere 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, PACCAD
clade, Panicoideae, Andropogoneae, Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Dases I to 669)
Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T.,
Resnick, A., Fraser, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T.,
Citek, R.W., Numberg, A., Robbins, D. and Lakey, N.
Consortium for Maize Genomics
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:4577"
/db_xref="taxon:4577"
/clone="xxMBMa054024"
/clone=lib="xM_0.7 1.5_KB"
/note="voctor="pBCSK-; Site_1: HincII; 0.7-1.5 kb
methylation filtered genomic_DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     °,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 6.8%; Score 44.6; DB 11; Length 588; Best Local Similarity 61.7%; Pred. No. 0.12; Matches 71; Conservative 0; Mismatches 44; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6.8%; Score 44.6; DB 12; Length 669;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9712 Medical Center Drive, Rockville, MD 20850, USA
Tel: 301-838-5843
                                                                  /mol_type="genomic DNA"
/cultivar="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="genomic DNA"
/strain="B73"
                                                                                                                     /db_xref="taxon:4577"
/clone="hp46c12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Zea mays"
                                                organism="Zea mays"
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seg primer: TF
Class: methylation filtered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fax: 301-838-0208
Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CC693540.1 GI:32098316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Other GSSs: OGWFD96TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TIGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CC693540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="hx41a10"
/lab host="JM107"
/lab host="JM107"
/clone lib="WGS-ZmaysF (JM107 adapted methyl filtered)"
/clone lib="WGS-ZmaysF (JM107 adapted methyl filtered)"
/note="Organ: immature ears; Site_1: Xba I; Site_2: Xba I;
The vector was digested with XbaI_and one nucleotide was added by fill in the recessive 3' end. The genomic DNA was nebulized, end repaired, adaptor ligated and size fractionated using sephadex. The resulting fragments were between 0.8 and 3 kb and were cloned into the vector (.x/y reads in Mi3mpl9, .b/g reads in pUC19). The same ligation was transformed in either JM107 or DH5a."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSS 05-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                306 CGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCC 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E (Dasses 1 to 588)

Rabinowicz, F.D., O'Shaughnessy, A.L., Balija, V., Dedhia, N.,

Ratzenburger, F., King, L., Miller, B., Muller, S., Nascimento, L.,

Katzenburger, F., King, L., Miller, B., Muller, S., Nascimento, L.,

Zutavern, T., McCombie, N.R., and Martienssen, R.A.

Genomic shotgun sequences from Zea mays (methyl-filtered)

Unpublished (2002)

Contact: W. Richard McCombie

Lita Annenberg Hazen Genome Sequencing Center

Cold Spring Harbor Laboratory

PO Box 100, Cold Spring Harbor, NY 11724, USA

Tel: 516 367 8874

Fax: 516 367 8874

Email: mccombie@cshl.org

Plate: hp46 row: c column: 12

Seq primer: -21Mi3UnivFwd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD
clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BH873693 588 bp DNA linear GSS 05-AUG-hp46c12.gl WGS-ZmaysF (JM107 adapted methyl filtered) Zea mays genomic clone hp46c12 5', genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6.8%; Score 44.6; DB 11; Length 543; 61.7%; Pred. No. 0.12; ive 0; Mismatches 44; Indels 0;
                 Lita Annenberg Hazen Genome Sequencing Center Cold Spring Harbor Laboratory PO Box 100, Cold Spring Harbor, NY 11724, USA Tel: 516 367 8894
Email: mccombie@cshl.org
Plate: hx1 row: a column: 10
Seq primer: -21M13UnivFwd
Class: shotgun
High quality sequence stop: 543.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44;
                                                                                                                                                                                                                                                                                                                /organism="Zea mays"
/mol_type="genomic DNA"
/cultivar="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  High quality sequence stop: 588
                                                                                                                                                                                                                                                                                                                                                                                               'db xref="taxon:4577"
Contact: W. Richard McCombie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BH873693
BH873693.1 GI:22109590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                 . .543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Class: shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zea mayв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
BH873693/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                       FEATURES
  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
```

ö

Search completed: November 1, 2006, 07:01:21 Job time: 2141.12 secs

Sequence 585, App Sequence 24865, A Sequence 323, App Sequence 47, Appl Sequence 47, Appl Sequence 96920, A

Sequence 19390, A Sequence 28, Appl Sequence 18, Appl Sequence 711, App Sequence 721, App Sequence 656, App

Sequence 106,

Sequence:

on:

Searched:

Database

```
GENERAL INCRMATION:

APPLICANT: Percer, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Eagleton, Clare
APPLICANT: Lasleton, Clare
APPLICANT: Wood, Marion
APPLICANT: Visser, Elizabeth
TILLE OF INVENTION: Compositions and Methods for the
TILLE OF INVENTION: Modification of Gene Expression
TILLE OF INVENTION: Modification of Gene Expression
FILE REPRENCE: 11000.1036c4
CURRENT FILING DATE: 2002-04-30
PRIOR FILING DATE: 2001-06-20
PRIOR PELICATION NUMBER: PCT/NZ 01/00115
PRIOR PELICATION NUMBER: U.S. No. US20030101478A1 09/528,401
PRIOR FILING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR PELING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR SEQ ID NOS: 143
SOFTWARE: PSECEO for Windows Version 4.0
SEQ D DO 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 100.0%; Score 657; DB 6; Length 3070; Best Local Similarity 100.0%; Pred. No. 9.4e-200; Matches 657; Conservative 0; Mismatches 0; Indels 0
          US-10-437-963-96920
                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-737-082-47
US-10-765-790-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 113, Application US/10137036 Publication No. US20030101478A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-10-137-036-113
                                                                6.8 1951
6.6 2000
6.6 2000
6.5 2199
6.3 126193
6.3 126193
6.3 24080
6.3 24080
6.3 24080
6.3 24080
6.2 257
6.2 2000
6.2 2000
6.2 2000
6.2 100464
6.2 100464
6.2 100464
                             5626
7228
1951
2000
2000
2199
493631
126192
                                                                                                                                                                                                                                                                                                                                                   40.8
Published Applications NA Main:*

1. /EMC Celerra SIDS3/ptodata/2/pubpna/US07_pubCOMB.seq:*
2. /EMC Celerra SIDS3/ptodata/2/pubpna/US08_buBCOMB.seq:*
3. /EMC Celerra SIDS3/ptodata/2/pubpna/US08_buBCOMB.seq:*
4. /EMC Celerra SIDS3/ptodata/2/pubpna/US09B_PUBCOMB.seq:*
5. /EMC Celerra SIDS3/ptodata/2/pubpna/US09B_PUBCOMB.seq:*
6. /EMC Celerra SIDS3/ptodata/2/pubpna/US09C_PUBCOMB.seq:*
7. /EMC Celerra SIDS3/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
8. /EMC Celerra SIDS3/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
9. /EMC Celerra SIDS3/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
10. /EMC Celerra SIDS3/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
11. /EMC Celerra SIDS3/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
12. /EMC Celerra SIDS3/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
13. /EMC Celerra SIDS3/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
14. /EMC Celerra SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
15. /EMC Celerra SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16. /EMC Celerra SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16. /EMC Celerra SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16. /EMC Celerra SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16. /EMC Celerra SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 12, Appl
Sequence 12, Appl
Sequence 60, Appl
Sequence 60, Appl
Sequence 60, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 60, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 3, Appli
Sequence 4, Appli
Sequence 5, Appli
Sequence 6, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 113, App
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 113, App
Sequence 113, App
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 12, Appl
                                                                                                                                     (without alignments)
9604.757 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                     November 1, 2006, 11:25:56; Search time 840.519 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence Sequence 3
                                                                                                                                                                                                                             1 ctgagccatttaattcgaga.....aggagagagagaatgggtt
                GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6 US-10-137-036-113

9 US-10-702-319A-113

10 US-10-97-641-113

6 US-10-137-036-12

9 US-10-702-319A-12

10 US-10-97-641-12

6 US-10-137-036-60

9 US-10-702-319A-60

10 US-10-702-641-60

8 US-10-703-091-1

8 US-10-703-091-2

8 US-10-703-091-3

9 US-10-703-091-3

9 US-10-703-091-3

9 US-10-703-091-5

9 US-10-703-091-5

9 US-10-703-091-5

9 US-10-703-091-6

0 7 US-10-174-693-107
                                                                                                                                                                                                                                                                                                                   18892170 seqs, 6143817638 residues
                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                 US-10-702-319A-113_COPY_1019_1675
657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                    OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                            IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3070
3070
3070
661
661
661
2096
2096
534
485
306
293
                                  Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97.1
97.1
97.1
97.1
81.3
                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                657
638.2
638.2
638.2
638.2
638.2
638.2
638.2
134
434
434
434
73.8
73.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                             Perfect score:
                                                                                                                                                                                                                                                                Scoring table:
```

ö

Gaps

ö

Result No.

g & g

셤 ò ઠે 원 장 q 8 g ò

```
GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACCICCACCACATACCICACTICAATCCCCACCATITAICCGTITIATTICCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGGTGTAGGGTCCAATATTTTGCGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTCCGTATTTCTCTCCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                   CGAATTTCTCTTTTAGGTAACTAACCAATGATGCGCCATGTTCACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                                                                                                                               Length 3070;
                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Perera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Bagleton, Clare
APPLICANT: Lasham, Annette
APPLICANT: Usebam, Annette
APPLICANT: Visser, Elizabeth
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c4
CURRENT APPLICATION NUMBER: US/10/927,641
                                                                                                                                                                             Query Match
Best Local Similarity 100.0%; Pred. No. 9.4e-200;
Matches 657; Conservative 0; Mismatches 0;
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 129
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 113
LENGTH: 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 113, Application US/10927641; Publication No. US20050244968A1; GENERAL INFORMATION:
                                                                                                        TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
US-10-927-641-113
                                                                                                                                    , ORGANISM: Euca.
US-10-702-319A-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                              Africitriacidictalaritricciosagostrocroaactocaaoriccialaric 1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGCGCCAACCCAGATTGCAAAGAGCCACAAGGGCACGACCCAACCTTTCCTTAACAAG 1258
                                                   1078
                                                                                                               GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGGTGTACGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAACCICCACCACCAIACCICACTICAAICCCCACCAITTAICCTTTTAITTTCTTTTGC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                      AACTCCCTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                       181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 240
                                                                                                                                                                                                                                                                                                                                    ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACAAATAGGCTCTTGTACCGGG 300
                                                                                           120
                                                                                                                                                                          180
            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITICICICIATATICIGGITCACCGGITGGAGICAATGGCATGCGTGACGAATGIACAT
                                  GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                           CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
              CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2

US-10-702-319A-113

Sequence 113, Application US/10702319A

Sequence 113, Application US/10702319A

Sequence 113, Application US/10702319A

Sequence 113, Application US/10702319A

SEQUENCE 113

APPLICANT: Bacleton, Clare

TITLE OF INVENTION: Modification of Gene Expression

TITLE OF INVENTION: Modification of Gene Expression

TITLE OF INVENTION: Modification of Gene Expression

FILE REFERENCE: 11000-1036c5

CURRENT APPLICATION NUMBER: US/10/702,319A

CURRENT APPLICATION NUMBER: US. No. 10/291,447

PRIOR APPLICATION NUMBER: US. No. 60/425,087

PRIOR FILING DATE: 2002-11-08

PRIOR PELLING DATE: 2002-11-08

PRIOR PELLING DATE: 2002-11-08

PRIOR PELLING DATE: 2002-04-30

PRIOR PELLING DATE: 2001-06-20

PRIOR PELLING DATE: 2000-10-28

PRIOR PELLING DATE: 2000-10-28

PRIOR PELLING DATE: 2000-11-28

PRIOR PELLING DATE: 2000-11-28

PRIOR PELLING DATE: 2000-11-28

PRIOR PELLING DATE: 2000-11-28

PRIOR PELLING DATE: 2000-10-28

PRIOR PELLING DATE: 2000-02-24

PRIOR PELLING DATE: 2000-02-24

PRIOR PELLING DATE: 2000-11-28

PRIOR PELLING DATE: 2000-11-28

PRIOR PELLING DATE: 2000-11-28

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DATE: 2000-11-38

PRIOR PELLING DA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1499
                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                         1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                             1019
                                                                                                                                             1079
                                                                                                                                                                                   121
                                                                                                                                                                                                                         1139
                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                      61
```

g

ઠ 셤

q ð 셤 ò g ઠ

1378

360

1258

1078

120

ö

1438

420

480

540

```
ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arcarcaccagarcaccagradagagradararrantalcalaracagarcacraracaga 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGTITICICICIATATICIGGTICACCGGTIGGAGTCAAIGGCAIGCGIGACGAAIGT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTCCGTATTTCTCTCACTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAATITICICITITIAGGIAAGIAACCAATGATGCGCCATGTTGACAAAAAGGCTGATIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTATGATCTTGGGTTGTTGGTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACAAAATAGCTCTTGTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 AACTCCGTATTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGAGCCATTTAATTTCGAGAGCACATCGCCCAAAATTATTCTTGCTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                            ; CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: PCT/NZ 01/00115
PRIOR PILING DATE: 2001-06-20
PRIOR FILING DATE: 2001-06-20
PRIOR PELING DATE: 2000-11-28
PRIOR PELING DATE: 2000-11-28
PRIOR PELING DATE: 2000-11-28
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 1000-02-24
PRIOR PELING DATE: 1999-07-30
PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 60/146,591
PRIOR PILING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWARE: FRAEESQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 97.1%; Score 638.2; DB 6; Length 661; Best Local Similarity 98.9%; Pred. No. 4.5e-194; Matches 654; Conservative 0; Mismatches 3; Indels 4
                                                                                             APPLICANT: Perera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Ragleton, Clare
APPLICANT: Eagleton, Clare
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REPERENCE: 11000.1036c4
CURRENT APPLICATION NUMBER: US/10/137,036
                   ; Sequence 12, Application US/10137036; Publication No. US20030101478A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-137-036-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1019 CTGAGCCATTTAATTGGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1139 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1199 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGGACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1319 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1439 TITICICICIATATICIGGIICACCGGIIGGAGIICAAIGGCAIGCGIGACGAAIGIAAATI 1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTGGTGTAGGGTCCAATATTTTGCGGGAGGTTGGTGAACCGCAAAGTTCCTATATATC 1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1559 GAACCTCCACCACCATACCTCATTCATTCCATTTATCCTTTTATTTCCTCTGC 1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTCCGTATTTCTCTCACACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
           PRIOR APPLICATION NUMBER: PRIOR APPLICATION NUMBER: US/10/137,036
PRIOR FILING DATE: 2002-04-30
PRIOR FILING DATE: 2001-06-05
PRIOR FILING DATE: 2001-06-05
PRIOR PILING DATE: 2001-06-05
PRIOR APPLICATION NUMBER: U.S. No. 09/724,624
PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
PRIOR APPLICATION NUMBER: PCT/NZO0/00018
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 1099-07-30
PRIOR PILING DATE: 1099-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 657; DB 10;
Pred. No. 9.4e-200;
0; Mismatches 0;
2004-08-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
larity 100.0%;
Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; ORGANISM: Eucalyptus grandis
US-10-927-641-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   al Similarity
657; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠ
```

ద ò 셤 ò

ঠ

ò

ઠે

ò

ઠ

120 120 180

9 9

Gaps

4;

240 240 300

180

360

476

477

	OY 417 AGAGITICICICITATATICIGGITICACCGGITGGAATGCCATGCC		QY 597 CTGCTTTCCTTTGCTCGAGTCTCGCGGAAGAGAGAGAGAG	661 T	RESULT 6 US-10-927-641-12 ; Sequence 12, Application US/10927641 ; Publication No. US20050244968A1 ; GENERAL INFORMATION:	; APPLICANT: Perera, Ranjan ; APPLICANT: Rice, Stephen ; APPLICANT: Lasjaton, Clare ; APPLICANT: Lasham, Annette ; APPLICANT: Wood, Marion	APPLICANT: Visser, Elizabeth ; TITLE OF INVENTION: Compositions and Methods for the ; TITLE OF INVENTION: Modification of Gene Expression ; TITLE OF INVENTION: Modification of Gene Expression ; FILE REFERENCE: 11000.1036c4 ; CURRENT APPLICATION NUMBER: 18/10/927,641	PRIOR APPLICATION NUMBER: PRIOR APPLICATION NUMBER: US/10/137,036 ; PRIOR FILING DATE: 2002-04-30 ; PRIOR APPLICATION NUMBER: PCT/NZ 01/00115 ; PRIOR FILING DATE: 2001-06-20	PRIOR APPLICATION NUMBER: U.S. NO. 09/124,024 PRIOR FILING DATE: 2000-011-28 PRIOR PILING DATE: 2000-06/10/2001 PRIOR FILING DATE: 2000-06/20/2001	PRIOR APPLICATION NUMBER: PC1/NACO/OCCIO PRIOR PILING DATE: 2000-02-24 PRIOR APPLICATION NUMBER: U.S. No. 60/146,591 PRIOR FILING DATE: 1999-07-30	PRIOR APPLICATION UNDERS: U.S. NO. 07/2/0/50 ; PRIOR FILING DATE: 1999-013-25 ; NUMBER OF SEQ ID NOS: 143 ; SOFTWARE: FastSEQ for Windows Version 4.0	; SEQ ID NO 12 ; LENGTH: 661 ; TYPE: DNA ; ORGANISM: Eucalyptus grandis	US-10-927-641-12 Query Match Query Matches Similarity 98.9%; Pred. No. 4.5e-194; Matches 654; Conservative 0; Mismatches 3; Indels 4; Gaps 1;
Db 481 ACATATTGGTGTAGGGTCCAATATTTTGCGGAGGGTTGGTGAACCGCAAAGTTCCTATA 540 Qy 537 TATCGAACCTCCACCACCATCCACTTCAATCCCACTTTATCCGTTTTATTTCCT 596	Oy 657 T 657 Db 661 T 661	KESULI S US-10-702-319A-12 US-10-702-319A-12 Sequence 12, Application US/10702319A ; Publication No. US20050026162A1 ; GENERAL INFORMATION: ; APPLICANT: Perera, Ranjan ; APPLICANT: Rice, Stephen	APPLICANT: Eagleton, Clare TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Modification of Gene Expression FILE REFERENCE: 11000.1036c5 CHRRENT APPLICATION NUMBER: US/10/702,319A		FILING DATE: 2002-11-08 APPLICATION NUMBER: U.S. NO. FILING DATE: 2002-04-30 APPLICATION NUMBER: U.S. NO. FILING DATE: 2000-11-28	PRIOR PRIOR PRIOR PRIOR PRIOR			Query Match Best Local Similarity 98.9%; Pred. No. 4.5e-194; Matches 654; Conservative 0; Mismatches 3; Indels 4; Gaps 1;	Qy 1 CTGAGCCATTAATTCGAGAGACACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT 60	OY 61 CGAATTTCTCTTTAGGTAAGTAACAATGATGGCCCATGTTGACAAAAAGGCTGATTA 120 	Qy 121 GTATGATCTTGGAGTTGTTGCTGCAAATTTGCAAGCTGACGATGGCCCTCAGGGAAATT 180	OY 181 AAGGCGCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCTTTCCTTAACAG 240 181 AAGGCGCCAACCCAGATTGCAAAGAGCACCAACGATCCAACCTTTCCTTAACAG 240 bb 181 AAGGCGCCAACCCAGATTGCAAAGAGCACAACGATCCAACCTTTCCTTAACAAG 240 241 ATCATCACCAGATCGGCCAGTAAGGGTAATTAATTTAACAAATAGCTCTTGTACGGG 300

1;

g

ò

g

ò

셤 ò g

ઠે

셤

ઠે

g

ò

g

ઠે

a

ઠે g ò

ò

g ò

```
101 CGAATTTTTCTCTTTTAGGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 221 AAGGGGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                       41 CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCATCACCAGATGGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        521 ACATATTGGTGTAGGGTCCAATATTTTGCGGGGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAATTTTCTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                          GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACTCCGTATTTCTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGITITCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATCGAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                  4.
                                                                                                                                                                                                                              Length 2096;
PRIOR FILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 60/146,591
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 09/276,599
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWARE: PSELSEQ for Windows Version 4.0
LENGTH: 2096
                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                .
9
                                                                                                                                                                                                                                                                  3;
                                                                                                                                                                                                                              Score 638.2; DB 6;
Pred. No. 8.6e-194;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 60, Application US/10702319A
Publication No. US20050026162A1
GENERAL INFORMATION:
APPLICANT: Percea, Ranjan
APPLICANT: Rice, Stephen
                                                                                                                                                                                                                                97.1%;
98.9%;
                                                                                                                                                           ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-10-137-036-60
                                                                                                                                                                                                                            Query Match
Best Local Similarity 98.9
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ť 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-702-319A-60
                                                                                                                                                                                                                                                                                                     -
                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                   ٠Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                240
                                                                                        120
                                                                                                                                                             180
                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                            416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                9
                       9
                                                                                                                                                                                                                                                  AAGGCGCCAACCCAGATTGCAAAGAGCACAAGAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                          AGAGITITICICITATATICIGGITICACCGGITICAGAGCATGCCAGCGGAGGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATATTGGTGTAGGGTCCAATATTTTGGGGGGGGGTTGGTGAAACCGCAAAGTTCCTATA
                                           CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                        CGAATTTTCTCTCTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                            CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                           GTATGATCTTGGAGTTGTTGGTACAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                               GTATGATCTTGGAGTTGTTGGTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                              ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                       AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                          AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 60, Application US/10137036

| Sequence 60, Application US/10137036
| Publication No. US20030101478A1
| GENERAL INFORMATION:
| APPLICANT: Rice, Stephen
| APPLICANT: Bagleron, Clare
| APPLICANT: Bagleron, Clare
| APPLICANT: Used and Marion
| APPLICANT: Vises F. Bizabeth
| TILLE OF INVENTION: Compositions and Methods for the
| TILLE OF INVENTION: Compositions and Methods for the
| TILLE OF INVENTION: Modification of Gene Expression
| TILLE PLINGTON NUMBER: US/10/137,036
| CURRENT FILING DATE: 2002-04-30
| PRIOR PILING DATE: 2000-106-20
| PRIOR PLICATION NUMBER: U.S. No. US20030101478A1 09/724,624
| PRIOR PLLING DATE: 2000-11-28
| PRIOR PLLING DATE: 2000-06-20
| PRIOR PLLING DATE: 2000-06-20
| PRIOR PLLING DATE: 2000-06-20
| PRIOR PLLING DATE: 2000-06-20
| PRIOR PLLING DATE: 2000-06-20
| PRIOR PLLING DATE: 2000-06-20
| PRIOR PLLING DATE: 2000-06-20
| PRIOR PLLING DATE: 2000-06-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
US-10-137-036-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ŀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   537
                                                      н
                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             657
                                                                                        61
                                                                                                                         61
                                                                                                                                                           121
                                                                                                                                                                                             121
                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
```

160

180 220 240

100 120

9

280

340 360

300

416

460 476 520 536 580 969 640 959 700

```
240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
          929
                                 GTATGATCTTGGAGTTGTTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 ATCATCACCAGATCGGCCAGTAAGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 CGAATTTTCTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cGAATTITCTCTTTTAGGTAAGTAACCAATGATGCATCATCATGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-927-641-60
US-10-927-641-60
US-10-927-641-60
Sequence 60, Application US/10927641
Publication No. US20050244968A1
GENERAL INFORMATION:
APPLICANT: Perera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Laeqleton, Clare
APPLICANT: Laeqleton, Clare
APPLICANT: Mood, Maxion
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c4
CURRENT PILING DATE: 2004-08-27
PRIOR APPLICATION NUMBER: PRIOR APPLICATION NUMBER: US/10/927,641
CURRENT FILING DATE: 2001-06-20
PRIOR PILING DATE: 2001-06-20
PRIOR PILING DATE: 2000-04-27/NZ 01/00115
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 1999-03-25
NUMBER OF SEX ID NOS: 143
SOFTWARE: FastSEQ for Windows Version 4.0
: I.ENGTH: 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10; Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGGCACATCGCCCAAAATTATTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
97.1%; Score 638.2; DB 10;
Best Local Similarity 98.9%; Pred. No. 8.6e-194;
Matches 654; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
CRGANISM: Eucalyptus grandis
US-10-927-641-60
                                                                                                 T 657
                                                                                                                                       T 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            161
                                                                                                                                         701
                                                                                                   657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                  셤
                                                셤
                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATCGAACCTCCACCACATACTCCATCAATCCCCACCATTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATATTGGTGTAGGGTCCAATATTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 9; Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
APPLICANT: Bagleton, Clare
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c5
CURRENT APPLICATION NUMBER: US/10/702,319A
CURRENT FILING DATE: 2003-11-06
PRIOR APPLICATION NUMBER: U.S. No. 10/291,447
PRIOR APPLICATION NUMBER: U.S. No. 60/425,087
PRIOR FILING DATE: 2002-11-08
PRIOR FILING DATE: 2002-04-30
PRIOR FILING DATE: 2002-04-30
PRIOR FILING DATE: 2000-11-28
PRIOR FILING DATE: 2000-11-28
PRIOR FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
PRIOR PILING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-02-24
PRIOR PELING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-07-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 638.2; DB 9;
Pred. No. 8.6e-194;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 98.9%;
Matches 654; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-702-319A-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
```

g δ 유 ò g Š g ઠે

셤 Š 셤 ò

a ò

8 셤 ò q ò

QY 392 GAGAGAGAGAGAGAGAGATTTTCTCTCTATATTCTGGTTCACCGGTTGG 451 Db 301 GAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGG 360 QY 452 AGTCAATGGCATGCGTAATGTACATATTCTCTCTATATTTTGCGGAGG 511 Db 361 AGTCAATGGCATGCGTAACGAATGTACATATTGGTGTAGGTCCAATATTTTGCGGAGG 511 Db 362 GTTGGTGAACGCAATGTACATATTGGTGTAGGTCCAATATTTTGCGGAGG 420 QY 512 GTTGGTGAACGCAAAGTTCCTATATATCGAACCTCCACCACCACCACCACCACCACCACCACCACCACC	RESULT 11 US-10-703-091-2 i Sequence 2, Application US/10703091 j Publication No. US20040146904A1 i GENERAL INPORMATION: APPLICANT: PHILLIPS, JONATHAN APPLICANT: EAGLETON, CLARE TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF FILE REFERENCE: 044463-0263 CURRENT FAPLICATION WUMBER: US/10/703,091 CURRENT FILING DATE: 2002-11-07 PRIOR FILING DATE: 2002-11-08 NUMBER OF SEQ ID NOS: 8 SOFTWARE: Patentin Ver. 3.2 SEQ ID NO 2 LENGTH: 485 TYPE: DNA ORGANISM: Eucalyptus grandis US-10-703-091-2	Query Match
		CURRENT FILING DATE: 2003-11-08 PRIOR PILING DATE: 2003-11-08 PRIOR APPLICATION WUMBER: 60425,087 PRIOR APPLICATION WUMBER: 60425,087 PRIOR PILING DATE: 2003-11-08 NUMBER: 05 SEQ ID NOS: 8 SOFTWARE: Patentin Ver. 3.2 SEQ ID NO 1 SEQ ID NOS: 8 SOFTWARE: Patentin Ver. 3.2 SOFTWARE: Patentin Ver. 3.2 SOFTWARE: Patentin Ver. 3.2 SOFTWARE: Patentin Ver. 3.2 SOFTWARE: Patentin Ver. 3.2 SOFTWARE: Patentin Ver. 3.2 SOFTWARE: Patentin Ver. 3.2 SOFTWARE: Patentin Ver. 3.2 SOFTWARE: Patentin Ver. 3.2 Pred. No. 1.4e-160; DA 1 A TOTAL CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA CORPORATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA ADMINISTRATION OF PATENTIA

```
ORGANISM: Eucalyptus grandis
US-10-703-091-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-703-091-6
                                                                                                 293;
                                                               Query Match
Best Local S:
Matches 293,
                                                                                                                                                                                                                                                                            453
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                     셤
                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                     Sequence 3, Application US/10703091
; Publication No. US20040146904A1
; Publication No. US20040146904A1
; GENERAL INFORMATION:
APPLICANT: PHILLIPS, JONATHAN
; APPLICANT: EAGLETON, CLARE
; TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
; PILE REFERENCE: 044463-0263
; CURRENT APPLICATION NUMBER: US/10/703,091
; PRIOR FILING DATE: 2003-11-08
; PRIOR FILING DATE: 2002-11-08
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 3
; LENTH: 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320 TICCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAAACCCACAAAAGGTCAGAT 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 TITTGCGGGAGGGTTGGTGAACCGCAAGTTCCTATATATGGAACCTCCACCACATACC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   560 TCACTICAAICCCCACCAIITAAICCGIIITAAITICCTCIGCIITCCTTTGCICGAGICIC 619
241 ICACTICAAICCCCACCAITIAICCGIITIAIIIICCICTGCTIITGCICGAGICIC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4, Application US/10703091
Sequence 4, Application US/10703091
Sequence 4, Application No. US200401469041
GENERAL INFORMATION:
APPLICANT: PHILLIPS, JONATHAN
APPLICANT: PHILLIPS, JONATHAN
APPLICANT: EAGLETON, CLARE
TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
FILE REFERENCE: 044463-0263
CURRENT APPLICATION NUMBER: US/10/703,091
CURRENT FILING DATE: 2003-11-07
PRIOR FILING DATE: 2003-11-08
NUMBER OF SEQ ID NOS: 8
SCOTTWARE: PatentIn Ver. 3.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           380 GICATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTITICTCTCTATATICTGG 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TICACCGGITGGAGICAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGICCAATA 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 TICCATAAACCCCCGATTAATTIGGIGGAAAGCGACAGCAACCCACAAAAGGICAGAI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46.6%; Score 306; DB 8; Length 306; larity 100.0%; Pred. No. 2.7e-87; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                        ) ORGANISM: Eucalyptus grandis
US-10-703-091-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301 GCGGAA 306
                                                    CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local 51....
Matches 306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
US-10-703-091-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 4
LENGTH: 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         200
                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                       621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                      셤
                         ò
```

```
RESULT 14
US-10-703-094-5

Sequence 5, Application US/10703091

Sequence 5, Application No. US20040146904A1

GENERAL INFORMATION:
APPLICANT: PHILLIPS, JONATHAN
TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
CURRENT FAPLICATION WHOBER: US/10/703,091

CURRENT FILING DATE: 2003-11-07

PRIOR FILING DATE: 2003-11-07

PRIOR FILING DATE: 2002-11-08

NUMBER OF SEQ ID NOS: 8

SOFTWARE: PATENTION OF: 3.2

SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            999
                                               o;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 6, Application US/10703091

Publication No. US20040146904A1

GENERAL INFORMATION;
APPLICANT: PHILLIPS, JONATHAN

APPLICANT: PHILLIPS, JONATHAN

TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF

TITLE OF INVENTION: 1044465-0263

CURRENT APPLICATION NUMBER: US/10/703,091
                                                                                                                                                                                                         452
                                                                                                                                                                                                                                                                            512
                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  567 AATCCCCACCATTTATCCGTTTTATTTCCTCGCTTTCCTTTGCTCGAGGTCTCGCAGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          507 GGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GGAGGGTTGGTGAACGCAAAGTTCCTAIATATCGAACCTCCACCATACCTCCTTC
                                                                                       333 TGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGAG
                                                                                                                      1 IGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGAG
                                                                                                                                                                                 393 AGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGA
                                                                                                                                                                                                                                                                         GTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTGCGGGAGGG
                                                                                                                                                                                                                                                                                                   513 TTGGTGAACCGCAAAGTTCCTATATCGAACCTCCACCACCATACCTCACTTCAATCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Gaps
                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                         573 CACCATTTATCCGTTTTATTTCCTCTGCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 CACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGATCTCGCGGAA 293
                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 119;
  Length 293,
44.6%; Score 293; DB 8; Length 29
100.0%; Pred. No. 4e-83;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
18.1%; Score 119; DB 8; I
Best Local Similarity 100.0%; Pred. No. 2.6e-27;
Matches 119; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA , ORGANISM: Bucalyptus grandis US-10-703-091-5
                                                      Conservative
                              Similarity
```

THIS PAGE LEFT BLANK

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
    00000 00000
                                                                                                                                                                                                                                                                                                                                                                                 score greater than or equal to the score of the result bein and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BB 88
                                                                                                                                                                                                                                                      638.2
638.2
638.2
                                                                                                                                                                                                                                                                                                                     Score
               73.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
773.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                    Issued Patents_NA:*

1: /EMC_Celerra_SIDS3/ptodata/2/ina/1_COMB.seq:*

2: /EMC_Celerra_SIDS3/ptodata/2/ina/6Ā_COMB.seq:*

3: /EMC_Celerra_SIDS3/ptodata/2/ina/6Ā_COMB.seq:*

4: /EMC_Celerra_SIDS3/ptodata/2/ina/6Ā_COMB.seq:*

5: /EMC_Celerra_SIDS3/ptodata/2/ina/7_COMB.seq:*

6: /EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*

7: /EMC_Celerra_SIDS3/ptodata/2/ina/PCTMS_COMB.seq:*

9: /EMC_Celerra_SIDS3/ptodata/2/ina/PCTMS_COMB.seq:*

9: /EMC_Celerra_SIDS3/ptodata/2/ina/BCTMS_SEQ:*

10: /EMC_Celerra_SIDS3/ptodata/2/ina/Backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length:
                                                                                                                                                                                                                                                                                                                     Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                           1987654321
 is the number of results predicted by chance to have a ater than or equal to the score of the result being printed,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-702-319A-113_COPY_1019_1675
657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1403666 seqs, 935554401 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTITY NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           October 31, 2006, 23:41:44 ; Search time 122.108 Seconds (without alignments) 10067.438 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctgagccatttaattcgaga.....aggagaggaggagaatgggtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Copyright
458

0 1528

0 1601

0 14037

0 72604

0 72604

0 72604

0 37510

0 36317

0 36322

2830
                                                                                                                                 130563
131379
                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000000000
                                                                                                                                                           2096
1630
1630
421
421
421
407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration
                                                                                                                                                                                                                                                                                                                       DB
            US-09-598-401C-113
US-09-598-401C-12
US-09-598-401C-60
US-09-598-401C-60
US-09-615-192A-107
US-08-975-316-24
US-09-615-192A-106
US-09-169-789-106
US-09-169-789-106
US-09-169-789-106
US-09-169-789-106
US-09-199-016-12273
US-09-249-016-12637
US-09-249-016-13273
US-09-249-016-13273
US-09-249-016-13273
US-09-249-016-1329
US-09-249-016-1329
US-09-249-016-13297
US-09-249-016-13297
US-09-249-016-13297
US-09-949-016-13297
                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                     Description
                                                                             Sequence
Sequence
                                                                                                                  Sequence
Sequence
Sequence
                                                                                                                                                          Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                     Sequence
Sequence
                          Sequence
                                       Sequence
                                                    Sequence
                                                                                                        Sequence
                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                           Sequence
               Sequence
                                                                  Sequence
                                                                                                     113, App

12, Appl

12, Appl

60, Appl

107, Appl

107, Appl

24, Appl

24, Appl

24, Appl

24, Appl

106, Appl

106, Appl

106, Appl

106, Appl

106, Appl

106, Appl

106, Appl
             89176, A
17329, A
7, Appli
7, Appli
14273, A
12697, A
14047, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            657
```

		c 43					c 38														s S
U1	42	ω	N	μ.	0	Ψ	ω	7	on	u	42	w	N	_	0	φ	ω	7	on	u	44
38.8	38.8	38.8			œ	8	38.8	8	œ	38.8					œ	œ	38.8		38.8	39	39
5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
601	601	601	601	601	601	601	601	601	601	601	601	601	601	601	601	601	601	601	601	2830	2830
ω	ω	w	w	w	w	ω	w	ω	w	w	w	w	w	w	w	w	w	w	w	7	N
US-09-949-016-98006	US-09-949-016-98005	US-09-949-016-97741	US-09-949-016-97740	US-09-949-016-97739	US-09-949-016-97475	US-09-949-016-97474	US-09-949-016-97473	US-09-949-016-97209	US-09-949-016-97208	US-09-949-016-97207	US-09-949-016-96943	US-09-949-016-96942	US-09-949-016-96941	US-09-949-016-96677	US-09-949-016-96676	US-09-949-016-96675	US-09-949-016-96411	US-09-949-016-96410	US-09-949-016-96409	PCT-US93-04102-1	US-08-331-644-1
Sequence 98006,	Sequence 98005,	Sequence 97741,	Sequence 97740,	Sequence 97739,	Sequence 97475,	Sequence 97474,	Sequence 97473,	Sequence 97209,	Sequence 97208,	Sequence 97207,	Sequence 96943,	Sequence 96942,	Sequence 96941,	Sequence 96677,	Sequence 96676,	Sequence 96675,	Sequence 96411,	Sequence 96410,	Sequence 96409,	Sequence 1, Appli	Sequence 1, Appl:

ALIGNMENTS

APPLICANT: Perera, J. Ranjan APPLICANT: Eagleton, Clare APPLICANT: Rice, Stephen J. APPLICANT: Rice, Stephen J. TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Modification of Gene Expression FILE REFERENCE: 11000.1036c2 CURRENT APPLICATION NUMBER: US/09/598,401C CURRENT FILING DATE: 2000-06-20 PRIOR APPLICATION NUMBER: U.S. No. 6596925 60/146,591 PRIOR FILING DATE: 1999-07-30 PRIOR APPLICATION NUMBER: PCT/NZ00/00018 PRIOR APPLICATION NUMBER: PCT/NZ00/00018 PRIOR FILING DATE: 1999-03-25 PRIOR FILING DATE: 1999-03-25 NUMBER OF SEQ ID NOS: 120 NUMBER OF SEQ ID NOS: 120 ; LENGTH; 3070 TYPE: DNA ; ORGANISM: Eucalyptus grandis US-09-598-401C-113 RESULT 1 US-09-598-401C-113 GENERAL INFORMATION: SEQ ID NO 113 Sequence 113, Application US/09598401C Patent No. 6596925 Query Match Best Local Similarity Matches 657; Conserv FastSEQ for Windows Version 4.0 100.0%; Score 657; DB 3; ilarity 100.0%; Pred. No. 2.2e-209; Conservative 0; Mismatches No. 6596925 09/276,599 Length 3070;

밁 Ş 문 S В Ś 片 á

1139

121

181

1079

61 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA 120

CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA

CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT

1078

60 0

Indels

0,

Gaps

GTATGATCTTGGAGTTGTTGGTGCAAATTTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180

1198

1138

AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG 240 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT

```
APPLICANT: Perera, J. Ranjan
APPLICANT: Rice, Stephen J.
FITTLE OF INVENTION: Composition and methods for the TITLE OF INVENTION: modification of gene expression FILE REFERENCE: 11000.1036
CURRENT APPLICATION NUMBER: US/09/276,599
CURRENT FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 21
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 12
LENGTH: 661
TYPE: DNA
ORGANISM: Eucalyptus grandis
  밁
                                               밁
                   5
                                                                            δ
                                                                                                            밁
                                                                                                                                S
                                                                                                                                                                                                                       US-09-276-599-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 2
US-09-276-599-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                  Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 12, Application Patent No. 6380459
                                                                                                                                                                                                                               PEATURE:

NAME/KEY: 5'UTR
LOCATION: (1) ... (654)

NAME/KEY: TATA signal
LOCATION: (537) ... (543)

NAME/KEY: CAAT signal
LOCATION: (499) ... (502)
                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1259
  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                       61
                                                                                 61
                                                                                                                                                                 654;
                                                                                                                                     μ
                                                                                                                                                                            97.1%;
Similarity 98.9%;
                                                CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                 GTATGATCTTGGAGTTGTTGGTGCAAATTTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                       CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                      CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTCCTCTGC 1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACCTCCACCATACCTCACTTCAATCCCCACCATTATCCGTTTTATTTCCTCTGC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC 1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/09276599
                                                                                                                                                            Score 638.2; DB 3;
Pred. No. 1.8e-203;
0; Mismatches 3;
                                                                                                                                                              Indels
                                                                                                                                                                                      Length
                                                                                                                                                            4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1675
                                                                            120
                                                   120
                                                                                                        60
                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
```

```
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Perera, J. Ranjan
APPLICANT: Ragleton, Clare
APPLICANT: Ragleton, Clare
APPLICANT: Rice, Stephen J.

FITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c2
CURRENT APPLICATION MUMBER: US/09/598,401C
CURRENT APPLICATION NUMBER: US. No. 6596925 60/146,591
PRIOR APPLICATION NUMBER: U.S. No. 6596925 60/146,591
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09/276,599
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09/276,599
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09/276,599
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 120
SOPTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 661
TYPE: DNA
ORGANISM: Eucalyptus grandis
US-09-598-401C-12
 밁
                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 3
US-09-598-401C-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                              Query Match
Best Local Similarity
Matches 654; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 12, Application US/09598401C Patent No. 6596925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         417
                                                              654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATCGAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCGAACCTCCACCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGTTTTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              657
                                                                             97.1%;
98.9%;
                                                              <u>,</u>
                                                           Score 638.2; DB 3; Pred. No. 1.8e-203; 0; Mismatches 3;
                                                              Indels
                                                                                          Length
                                                              4
                                                           Gaps
 60
                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
```

Ś

61

CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120

```
CURRENT APPLICATION NUMBER: US/09/598,401C
CURRENT FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 6596925 60,
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR APPLICATION NUMBER: PCT/NZ00/00018
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09,
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09,
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 120
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 60
SEQ ID NO 60
SEQ ID NO 60
SEQ ID NO 60
TYPE: DNA
ORGANISM: Eucalyptus grandis
US-09-598-401C-60
                                                                                                                                                                                                                                                                                                                    RESULT 4
US-09-598-401C-60
                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                    ŝ
                                                                                                                                                                                                                                             Patent No. 6596925
GENERAL INFORMATION:
APPLICANT: Perera, J. Ranjan
APPLICANT: Eaglaton, Clare
APPLICANT: Rice, Stephen J.
                                                                                                                                                                                                                                                                                               Sequence 60, Application US/09598401C Patent No. 6596925
Query Match
Best Local Similarity
                                                                                                                                                                                                             TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Modification of Gene Expression FILE REFERENCE: 11000.1036c2
                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                          657
                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                         597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                    н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                 TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATCGAACCTCCACCACCATACCTCAACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               {f A}{f G}{f A}{f G}{f T}{f T}{f T}{f C}{f A}{f C}{f T}{f G}{f A}{f G}{f T}{f C}{f A}{f A}{f T}{f G}{f C}{f A}{f T}{f G}{f C}{f G}{f T}{f G}{f A}{f C}{f G}{f A}{f A}{f T}{f G}{f C}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                           657
                                                                                                                                                                                                                                                                                                                                                                     661
97.1%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                    Score 638.2; DB 3; Pred. No. 3.5e-203;
                                                                                                                              09/276,599
                                                                                                                                                                           60/146,591
           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                          656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
SOFTWARE: Fas
SEQ ID NO 107
LENGTH: 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                 641
                                                                                                                                                                                                                                                                                                                                                                                581
                                                                                                                                                                                                                                                                                                                                                                                                       537
                                                                                                                                                                                                                                                                                                                                                                                                                               521
                                                                                                                                                                                                                                                                                                                                                                                                                                                     477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                          657
                                                                                                                                                                                                                                                                                                                                                         597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                    701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             654;
                                                                                                                                                                                                                                                                                    н-
                                                                                                                                                                                                                                                                                                          н
```

```
APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilka
APPLICANT: Havukkala, Ilka
APPLICANT: Havukkala, Ilka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Cont
FILE REFERENCE: 11000.1003c4U
CURRENT APPLICATION NUMBER: US/09/615,192A
CURRENT FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR APPLICATION NUMBER: US 08/713,000
PRIOR FILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: US 09/169,789
PRIOR FILING DATE: 1988-10-09
PRIOR FILING DATE: 1988-10-09
PRIOR FILING DATE: 1988-10-09
PRIOR FILING DATE: 1988-10-09
PRIOR FILING DATE: 1988-10-09
NUMBER OF SEQ ID NOS: 405
                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-615-192A-107
                                                                                                                                                                                                                                                                                                                                                                                        Sequence 107, Application US/09615192A Patent No. 6410718
                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCCTTTCCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
--
                                                                                                                                                                                                                                                                      Content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400
```

```
Query Match
Best Local Similarity
Matches 75; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: DNA; ORGANISM: Eucalyptus US-09-615-192A-107
                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-169-789-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                             RESULT 7
US-08-975-316-24
                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 107, Application US/09169789 Patent No. 6653528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 107
LENGTH: 1630
                                                                                                                                                                                                                             Sequence 24, Application US/08975316 Patent No. 5952486
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
ORGANISM: Eucalyptus grandis
-09-169-789-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Materials and Methods for the TITLE OF INVENTION: Modification of Plant Lignin C FILE REFERENCE: 11000.1003c2
CURRENT APPLICATION NUMBER: US/09/169,789
CURRENT FILING DATE: 1998-10-09
EARLIER APPLICATION NUMBER: US 08/975,316
EARLIER APPLICATION NUMBER: US 08/975,316
EARLIER APPLICATION NUMBER: US 08/975,316
EARLIER APPLICATION NUMBER: US 08/975,316
EARLIER FILING DATE: 1997-11-21
EARLIER FILING DATE: 1996-09-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Bloksberg, Leonard N. APPLICANT: Havukkala, Ilkka
                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS:
                                                                                                                                  APPLICANT: BLOKSBERG, Leonard N., HAVUKKALA, Ilka APPLICANT: and GRIERSON, Alastair W. TITLE OF INVENTION: MATERIALS AND METHODS FOR TITLE OF INVENTION: THE MODIFICATION OF PLANT LIGN NUMBER OF SEQUENCES: 88
COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                    CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                           COUNTRY: USA
ZIP: 98121
                                                                                          STREET:
                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 643 AGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                         643
                                                                                                                                                                                                                                                                                                                                                                                                                     583
                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                          ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                    75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                        Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAGAGAATGGGTT 75
                                                                                                                                                                                                                                                                                                                                                         AGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                        AGGAGAGAATGGGTT 75
                                                           WA
                                                                                          2601 Elliott Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                            Law Offices of Ann W. Speckman
Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 75;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 75; DB 3; L; Pred. No. 2.5e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 3; Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2.5e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1630;
                                                                                                                                                       LIGNIN CONTENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                          642
                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-975-316-24
밁
                                                                                                                      US-09-615-192A-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-615-192A-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 75; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 421 base pairs
TYPE: nucleic acid
TYPE: nucleic single
                                                                                                                                                                             NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 24, Application US/09615192A Patent No. 6410718
                                                           Matches
                                                                                     Query Match
                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/615,192A
CURRENT FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR FILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: US 08/713,000
PRIOR FILING DATE: 1996-09-11
PRIOR APPLICATION NUMBER: US 09/169,789
PRIOR FILING DATE: 1000-1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: SLEATH, Janet
REGISTRATION NUMBER: 37,007
REFERENCE/DOCKET NUMBER: 1100
TELECOMMUNICATION INFORMATION:
TELEPHONE: 206-269-0565
TELEFAX: 206-269-0563
                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Materials and Methods TITLE OF INVENTION: Modification of Plant FILE REFERENCE: 11000.1003c4U
                                                                                                                                                                                                                         PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Bloksberg,
APPLICANT: Havukkala,
                                                                                                                                 TYPE: DNA
ORGANISM: Eucalyptus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION UNMBER: 08/713,
FILING DATE: September 11,
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                LENGTH: 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: FastSEQ for Windows Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM Con
OPERATING SYSTEM:
SOFTWARE: FastSE(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        641 AGAGGAGAGAATGGGTT 657
                         73
 13
                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bloksberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                for Windows Version 3.0
                                                                                                                                                                                                                            1998-10-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11.2%;
97.4%;
                                                                                                                                    grandis
                                                                                                                                                                                                                                                                                                                                                                                                I1kka
                                                                          11.2%;
                                                                                                                                                                                                                                                                                                                                                                                                            Leonard N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/975,316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11000/1003C1
                                                             ٥,
                                                           Score 73.8; DB 3;
Pred. No. 2.9e-14;
0: Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 73.8; DB 2;
Pred. No. 2.9e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,000
1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.0
                                                                                                                                                                                                                                                                                                                                                                  Lignin Content
                                                                                                                                                                                                                                                                                                                                                                                   for the
                                                                                         Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                              Gaps
                                     640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               640
       72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

RESULT 9 US-09-169-789-24

밁 S

641

AGAGGAGAGAATGGGTT

89

```
APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilka
TITLE DF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content
FILE REFERENCE: 11000.1003c2
CURRENT APPLICATION UNMBER: US/09/169,789
CURRENT FILING DATE: 1998-10-09
EARLIER FILING DATE: 1998-11-21
EARLIER FILING DATE: 1997-11-21
EARLIER FILING DATE: 1996-09-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
US-09-615-192A-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-09-169-789-24
                                                                                                             US-09-615-192A-106
                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/615,192A
CURRENT FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR FILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: US 08/713,000
PRIOR APPLICATION NUMBER: US 08/713,000
PRIOR FILING DATE: 1996-09-11
PRIOR APPLICATION NUMBER: US 09/169,789
PRIOR FILING DATE: 1998-10-09
PRIOR FILING DATE: 1998-10-09
PRIOR FILING DATE: 1998-10-09
PRIOR FILING DATE: 1998-10-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 24, Application US/09169789 Patent No. 6653528 GENERAL INFORMATION:
                                                                                                                                                                                SOFTWARE: F
                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 106, Application US/09615192A
Patent No. 6410718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 24
                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin (
FILE REFERENCE: 11000.1003c4U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 185
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                      TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                  LENGTH: 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 421
                                  Local Similarity nes 74; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 97.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  641 AGAGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGGAGAGAATGGGTT 89
                                                                                                                                                                                                   FastSEQ for Windows Version 3.0
                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11.2%;
                                                   11.2%;
98.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Score 73.8; D); Pred. No. 2.9e
                                  0;
                                                 Score 73.4; DB 3; Length 407; Pred. No. 3.9e-14;
                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2.9e-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                          Content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 421;
                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          640
                                ٥,
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
US-09-169-789-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                     ; ORGANISM: Human US-09-949-016-12273
                                                                                                                                                                                                                                FILE REFERENCE: CL001307

CURRENT APPLICATION NUMBER: US/09/949,016

CURRENT FILING DATE: 2000-04-14

PRIOR APPLICATION NUMBER: 60/241,755

PRIOR FILING DATE: 2000-10-20

PRIOR APPLICATION NUMBER: 60/237,768

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-09-08

PRIOR FILING DATE: 2000-09-08

PRIOR FILING DATE: 2000-09-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-949-016-12273/c
; Sequence 12273, Application US/09949016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-169-789-106
Query Match
Best Local Similarity 73.2
Best Focal Similarity 73.2
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
                                                                                                                                                          SEQ ID NO 12273
LENGTH: 13056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: FastSEQ for Windows Version SEQ ID NO 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 106, App
Patent No. 665352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 12273, F
Patent No. 681233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Materials and Methods for the TITLE OF INVENTION: Modification of Plant Lignin Content FILE REFERENCE: 11000.1003c2

CURRENT APPLICATION NUMBER: US/09/169,789

CURRENT FILING DATE: 1998-10-09

EARLIER APPLICATION NUMBER: US 08/975,316

EARLIER FILING DATE: 1997-11-21

EARLIER APPLICATION NUMBER: US 08/713,000

EARLIER APPLICATION NUMBER: US 08/713,000

EARLIER FILING DATE: 1996-09-11
                                                                                                                                                                                              PRIOR FILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Bloksberg, Leonard N. APPLICANT: Havukkala, Ilkka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Eucalyptus
                                                                                                                                          TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              643 AGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 AGGAGAGAATGGGTT 75
                                                                                                                                                        130563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAGAGAATGGGTT 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/09169789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11.2%;
                                           6.2%;
                         Score 40.6; DB Pred. No. 0.1; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 73.4; DB 3;
Pred. No. 3.9e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                           DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 3;
                                                               Length 130563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

0;

19;

Indels

<u>.</u>

Gaps

```
APPLICAUT: UNITER, J. Craig et al.
APPLICAUT: UNITER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASS
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF
TITLE REFERENCE: CLOO1307
FILE REFERENCE: CLOO1307
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-3
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR FILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTWARE: FASTUSE for Windows Version 4.0
SEQ ID NO 16050
LENGTH: 131379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
US-09-949-016-16050/c
                                                                                                                                                                                                     US-09-270-767-27637/c

(Sequence 27637, Application US/09270767)

(Sequence 27637, Application US/09270767)

(Sequence 27637, Application US/09270767)

(Patent No. 6703491

(Applicant: IMPORMATION: Nucleic acids and proteins of Drosophila melanogaster TITLE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster TITLE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster CURRENT APPLICATION NUMBER: US/09/270,767

(CURRENT APPLICATION NUMBER: US/09/270,767

(CURRENT TILING DATE: 1999-03-17

(NUMBER OF SEQ ID NOS: 62517

(SOFTWARE: Patentin Ver. 2.0

(SEQ ID NO 27637

LENGTH: 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: DNA
; ORGANISM: Human
US-09-949-016-16050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                            Ś
                                                                                                                                                    ORGANISM: Drosophila melanogaster US-09-270-767-27637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 16050, Appearent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 118294 hannggangcchachchghghannchchghghghanngghghghghghghghghghghgh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118234 GAGAGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          350 дадосдасладослассасларадостсадатотсятоссасдададададададададада
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 410 GAGAGAGAGAG 420
  125
                                   391 AGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGAGAGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAGAGAGAG 118224
ngagaangagagagagagagagagagarattaatttagaaaaataagtgtchctttttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/09949016
                                                                          6.0%;
ilarity 60.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.2%;
73.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Score 40.6; DB; Pred. No. 0.1; 0; Mismatches
                                                                              Score 39.6; DB 3;
pred. No. 0.0091;
0; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3;
                                                                                    44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASSOCIATED
OF DETECTION AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 131379;
                                                                                                                       Length 458;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118235
                                                     450
                66
```

밁

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-270-767-11960/c
                                                                                                                                                                                                                                                                                                ; TYPE: DNA
; ORGANISM: Drosophila melanogaster
US-09-270-767-11960
                                                                                                            Ś
                                                                                                                                                  밁
                                                                                                                                                                                 Ś
Search completed: November Job time : 123.108 secs
                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Homburger et al.

APPLICANT: Homburger et al.

PITIE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster rittle OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster rittle OF INVENTION UNMER: 1326-084

CURRENT APPLICATION NUMBER: US/09/270,767

CURRENT FILING DATE: 1999-03-17

NUMBER OF SEQ ID NOS: 62517

SOCTWARE: Patentin Ver. 2.0

SEQ ID NO 11960

LENGTH: 1528
                                                                                                                                                                                                                           Query Match
Best Local S
Matches 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 11960, Application US/09270767 Patent No. 6703491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           451 GAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTTCCAATAT
                                                                                                                                                                                     391 AGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTG 450
                                                                                                                                                    125 AGAGAAAGAGAGAGAGAGAGAGAGAGATATTAATTTAGAAAATAAGTGTĆAĆTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                            451 GAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT 500
                                                                             65
                                                                                                                                                                                                                           l Similarity
66; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gregegetregeregetakttaktettaggggeegekakkeekeekeekt 16
                                                                             GTGGGGGTTGGGTTAATTAATGTTAGGGGCGGGAAAGGACCAGGAT
                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                60.0%;
                         ۲,
                         2006, 11:48:34
                                                                                                                                                                                                                               Score 39.6; DB
Pred. No. 0.018;
0; Mismatches
                                                                                                                                                                                                                                                                        DB 3;
                                                                                                                                                                                                                                       44; Indels
                                                                                                                                                                                                                                                                          Length 1528;
                                                                                                                                                                                                                                           <u>,</u>
                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                       66
                                                                                                                                                                                                                                             0
```

Thu

Nov

N

13:35:55

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                     0 0 0
                                                                                      იიი
                                                                                                                                                                                                   00000
                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
      73.8
73.4
45.6
42.6
41.8
41.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Published Applications NA New:*

1: /EMC Celerra SIDS3/ptodata/2/pubpna/US09 NEW PUB.seq:*
2: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US06_NEW_PUB.seq:*
3: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US07_NEW_PUB.seq:*
4: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US08 NEW PUB.seq:*
5: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_NEW_PUB.seq:*
6: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
7: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
8: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
9: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
9: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-702-319A-113_COPY_1019_1675
657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     November 1, 2006, 11:48:44 ; Search time 142.489 Seconds (without alignments) 8946.617 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2461376 seqs, 970166171 residues
       73
1111.4
6.2
6.0
6.0
6.0
6.0
6.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctgagccatttaattcgaga.....aggagagagagagaatgggtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Copyright
                                                5.5 5 2168
4 4 132942
3 176594
601
2 601
2 100610
2 1320443
2 1320443
2 1320443
1 54037
1 54037
1 54037
1 54651
2 7784
                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                               485
306
1630
421
407
1951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration
                                                                                                                                            US-11-229-856-78
US-11-29-856-80
US-11-397-533-107
US-11-397-533-107
US-11-397-533-107
US-11-397-533-106
US-10-449-902-24951
US-10-669-920-131
US-10-669-920-131
US-10-539-228-495
US-10-540-898-585
US-10-540-898-585
US-10-540-898-585
US-10-540-898-585
US-10-540-898-585
US-10-540-898-585
US-10-540-898-585
US-10-540-898-585
US-10-540-898-585
US-10-449-902-15128
US-10-449-902-15128
US-10-449-902-15128
US-11-30-997-421
US-11-30-997-421
US-11-30-902-15128
US-11-30-997-421
US-11-30-726-1103
                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                Sequence 78, Appl
Sequence 107, Appl
Sequence 107, Appl
Sequence 24, Appl
Sequence 96, Appl
Sequence 24951, Appl
Sequence 57, Appl
Sequence 51, Appl
Sequence 495, Appl
Sequence 495, Appl
Sequence 495, Appl
Sequence 21547,
Sequence 21547,
Sequence 21547,
Sequence 585, App
Sequence 372, App
Sequence 77, App1
Sequence 20101, A
Sequence 395, App
Sequence 511, App
Sequence 511, App
Sequence 15128, A
Sequence 103, App
Sequence 103, App
Sequence 103, App
Sequence 720, App
                                                                                                                                                                                                                                                                                                                                                                     Description
```

a			ი	ი	G	O	a	a			ი	a				ი	a			ი
45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
38.2	38.2	38.2	38.2	38.2	38.2	38.2	38.4	38.4	38.6	38.6	38.6	38.8	38.8	38.8	39	39.2	39.2	39.4	39.4	39.4
5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5. 8	5.9	5.9	5.9	5.9	5. 9	5.9	5.9	6.0	6.0	6.0	6.0	6.0
152096	34745	34261	15016	4284	2411	2002	582589	22582	151858	63529	51705	393323	145068	109669	47307	247461	1434	1071650	174518	120144
9	σ	6	8	თ	σ	σ	σ	σ	σ	σ	7	σ	σ	ø	σ	σ	9	ω.	σ	σ
US-10-540-898-942	US-10-669-920-1007	US-10-539-228-697	US-11-266-748A-32181	US-10-449-902-28344	US-10-612-783-3402	US-10-449-902-18409	US-10-669-920-1095	US-10-669-920-226	US-10-539-228-653	US-10-669-920-1422	US-11-330-726-229	US-10-540-898-23	US-10-539-228-33	US-11-021-837-41	US-10-669-920-318	US-10-539-228-131	US-11-056-355B-84700	US-11-266-748A-22664	US-10-669-920-712	US-10-539-228-143
Sequence 942,	Sequence 100	Sequence 697,	Sequence 321	Sequence 283	Sequence 3402,	Sequence 184	Sequence 1095,	Sequence 226,	Sequence 653,	Sequence 1422,	Sequence 229,	Sequence 23,	Sequence 33,	Sequence 41,	Sequence 318	Sequence 131,	Sequence 847	Sequence 22664,	Sequence 712	Sequence 143
, App	1007, Ap	, App	81, A	28344, A	2, Ap	18409, A	5, Ap	, App	, App	2, Ap	, App	Appl		Appl	318, App	, App	84700, A	664, }	•	, App

ALIGNMENTS

```
GENERAL INFORMATION:

APPLICANT: FORSTER, RICHARD L.

APPLICANT: ROTTMANN, WILLIAM H.

APPLICANT: CONNETT, MARIE B.

APPLICANT: SANDERS, PAUL

APPLICANT: SANDERS, PAUL

APPLICANT: ETAGEFRALD, SANDRA JOANNE

APPLICANT: ETAGLETON, CLARE

APPLICANT: FITZGERALD, SANDRA JOANNE

APPLICANT: HAGLETON MODIFICATION OF PLANT LIGNIN CON

FILE REFERENCE: 044463-0441

CURRENT APPLICATION UNDERE: US/11/229,856

CURRENT FILING DATE: 2005-09-20

PRIOR APPLICATION NUMBER: 10/946,650

PRIOR FILING DATE: 2004-09-22

PRIOR APPLICATION NUMBER: 10/946,644

PRIOR FILING DATE: 2004-09-22

INUMBER OF SEQ ID NOS: 86

SOFTWARE OF SEQ ID NOS: 86

SOFTWARE OF SEQ ID NOS: 86
                                                                         В
                                                                                                                      Ś
                                                                                                                                                                             맑
                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; LENGTH: 485
; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-11-229-856-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 1
US-11-229-856-78
                                                                                                                                                                                                                                                                                                                                                                                 Query Match 73.8%; Score 485; DB 8; Length 485; Best Local Similarity 100.0%; Pred. No. 6e-147; Matches 485; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 78, Application US/11229856 Publication No. US20060130183A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Ver. 3.3
                               321
                                                                               121
                                                                                                                           261
                                                                                                                                                                                                                                                                                                               141 GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                201
                                                                                                                                                                             61 AAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG 120
                                                                                                                                                                                                                                                                                  _
                                                                                                                                                                                                                AAAGAGCACAAAGAGCACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG
                                                                                                            TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT 320
                                                                                                                                                                                                                                                                                  GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCCAGATTGC
TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCCACAAAAGGTCAGATG 380
                                                                               TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONTENT
                                                                                                                                                                                                                                                                                                                                                                                 ٥,
                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                  60
```

```
Ş
                                                  밁
                                                                                     S
                                                                                                                         밁
                                                                                                                                                        Ś
                                                                                                                                                                                             밁
                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                          ; LENGTH: 306
; TYPE: DNA
; ORGANISM: Eucalyptus
US-11-229-856-80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
US-11-229-856-80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 80, Applicat Publication No. US200 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILING DATE: 2004-09-22
NUMBER OF SEQ ID NOS: 86
SOFTWARE: PATENTIN VET. 3.3
SEQ ID NO 80
                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: FORSTER, RICHARD L.
APPLICANT: ROTTMANN, WILLIAM H.
APPLICANT: CONNETT, MARIE B.
APPLICANT: SANDERS, PAUL
APPLICANT: STANDERS, GARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILE REFERENCE: 044463-0441
CURRENT APPLICATION NUMBER: US/11/229,856
CURRENT FILING DATE: 2005-09-20
PRIOR APPLICATION NUMBER: 10/946,650
PRIOR PILING DATE: 2004-09-22
PRIOR APPLICATION NUMBER: 10/946,644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: FITZGERALD, SANDRA JOANNE
APPLICANT: EAGLETON, CLARE
TITLE OF INVENTION: MODIFICATION OF PLANT LIGNIN CONTENT
                                                                                                                                                                                                                                                                                                   320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      441 TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT 500
                     560
                                                                                         500
                                                                                                                         121
                                                                                                                                                          440
                                                                                                                                                                                                                                                                                                                                       306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                        181
                                                                                                                                                                                                                 380 GTCATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTATATTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                  H
                                                                                                                                                                                               GTCATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTTCCTTTGCTCGAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAAACCCCACAAAAGGTCAGATG
                                                                                                                                               TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA 499
                                                                                                                                                                                                                                                                  TTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCCACAAAAGGTCAGAT
                                                                                                                                                                                                                                                                                      TTCCATAAACCCCTGATTAATTTGGTGGAAAGCGAAAGCCAACCCACAAAAGGTCAGAT 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTATATTCTGGT
                                                                                         TTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACC
                                                                                                                         TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACTICAATCCCCACCATTIATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCG 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/11229856
                                                                                                                                                                                                                                                                                                                                   46.6%; Score 306; DB 8; ilarity 100.0%; Pred. No. 5.9e-89; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US20060130183A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        485
                                                                                                                                                                                                                                                                                                                                                                                                                           grandis
                                                                                                                                                                                                                                                                                                                                     ,.
                                                                                                                                                                                                                                                                                                                                                                      Length 306
                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                     <u>,,</u>
                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                     619
                                                    240
                                                                                       559
                                                                                                                         180
                                                                                                                                                                                                                               439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
US-11-397-533-107
; Sequence 107, App
; Publication No. U
                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: Eucalyptus grandis US-11-397-533-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
            FILE REFERENCE: 11000.1003c6

CURRENT APPLICATION NUMBER: US/11/397,533

CURRENT FILING DATE: 2006.04-03

PRIOR APPLICATION NUMBER: US 08/975,316

PRIOR PILING DATE: 1997-11-21

PRIOR APPLICATION NUMBER: US 08/713,000

PRIOR FILING DATE: 1996-09-11

PRIOR PILING DATE: 1998-09-11

PRIOR APPLICATION NUMBER: US 09/169,789

PRIOR PILING DATE: 1998-10-09

PRIOR PILING DATE: 1998-10-09

PRIOR APPLICATION NUMBER: US 60/143,833

PRIOR FILING DATE: 1999-07-14

PRIOR FILING DATE: 1999-07-14
                                                                                                                                                                                                                                                                                                                                       US-11-397-533-24
                                                                                                                                                                                                                                                                                 Sequence 24, Application US/11397533 Publication No. US20060183895A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 107
LENGTH: 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Bloksberg, Leonard N. APPLICANT: Havukkala, Ilkka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 407
SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                           643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 TCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTC 300
                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 75; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAGAGAATGGGTT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                            AGGAGAGAATGGGTT 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/11397533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11.4%;
llarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US20060183895A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
```

```
TITLE OF INVENTION: Materials and Methods for the TITLE OF INVENTION: Modification of Plant Lignin CorFILE REFERENCE: 11000.1003c6

CURRENT APPLICATION NUMBER: US/11/397,533

CURRENT FILING DATE: 2006-04-03

PRIOR PILLING DATE: 1997-11-21

PRIOR PILLING DATE: 1997-11-21

PRIOR PILLING DATE: 1996-09-11

PRIOR APPLICATION NUMBER: US 08/713,000

PRIOR FILING DATE: 1996-09-11

PRIOR APPLICATION NUMBER: US 09/169,789

PRIOR APPLICATION NUMBER: US 09/143,833

PRIOR FILLING DATE: 1998-10-09

PRIOR PILLING DATE: 1999-07-14

PRIOR APPLICATION NUMBER: US 09/169,789

PRIOR APPLICATION NUMBER: US 09/163,833

PRIOR PILLING DATE: 1999-07-14

PRIOR APPLICATION NUMBER: US 09/615,192

PRIOR APPLICATION NUMBER: US 09/615,192

PRIOR APPLICATION NUMBER: US 09/615,192

PRIOR APPLICATION NUMBER: US 09/615,192

PRIOR APPLICATION NUMBER: US 09/615,192

PRIOR APPLICATION NUMBER: US 09/615,192

PRIOR APPLICATION NUMBER: US 09/615,192

PRIOR APPLICATION NUMBER: US 09/615,192

PRIOR APPLICATION NUMBER: US 09/615,192
APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 75; DB 7; L
Pred. No. 1.3e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Content
           Content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
RESULT 6
US-11-404-951-96/c
US-11-404-951-96/c
; Sequence 96, Application US/11404951
; Publication No. US20060236421A1
                                                                                                밁
                                                                                                                        S
                                                                                                                                                             В
                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-11-397-533-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-11-397-533-24
                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR FILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: US 08/713,000
PRIOR FILING DATE: 1996-09-11
PRIOR APPLICATION NUMBER: US 09/169,789
PRIOR FILING DATE: 1998-10-09
PRIOR PRIOR APPLICATION NUMBER: US 60/143,833
PRIOR FILING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: US 09/615,192
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 10/174,693
PRIOR FILING DATE: 2002-06-18
NUMBER OF SEQ ID NOS: 407
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ for Windows Version 3.0 SEQ ID NO 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                        LENGTH: 407
TYPE: DNA
ORGANISM: Eucalyptus grandis
-11-397-533-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/11/397,533
CURRENT FILING DATE: 2006-04-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Materials and Methods for the TITLE OF INVENTION: Modification of Plant Lignin FILE REFERENCE: 11000.1003c6
                                                                                                                                                                                                                                                                                                                                                                                   PRIOR FILING DATE: 2002-06-18
NUMBER OF SEQ ID NOS: 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilkka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 421
                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 10/174,693
                                                                                                                             643
                                                                                                                                                                                  641 AGAGGAGAGAATGGGTT 657
                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                             س
                                                                                                                                                                                                                         74;
                                                                                                                                                                                                                                          Similarity
                                                                                                                   AGGAGAGAATGGGTT 657
                                                                                               AGGAGAGAATGGGTT 75
                                                                                                                                                             AGAGGAGAGAATGGGTT 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/11397533
                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US20060183895A1
                                                                                                                                                                                                                                        11.2%;
98.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11.2%;
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                         Score 73.4; DB 7;
Pred. No. 2.1e-13;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 73.8; DB 7; Length 421; Pred. No. 1.6e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lignin Content
                                                                                                                                                                                                                                                       Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                            642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            640
                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             72
                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-449-902-24951/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-11-404-951-96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 96
LENGTH: 1951
TYPE: DNA
                                                                                                                 SEQ ID NO 24951
LENGTH: 2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 24951, Application US/10449902
Publication No. US20060123505A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 108; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                               APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: Foundation for Advancement of International Science.
TITLE OF INVENTION: FULL-LENGTH PLANT cDNA AND USES THEREOF
FILE REFERENCE: MOA-A02.05Y1-US
CURRENT PILING DATE: 2003-05-29
PRIOR APPLICATION NUMBER: US-10/449,902
CURRENT FILING DATE: 2003-05-30
PRIOR APPLICATION NUMBER: JP 2002-203269
PRIOR APPLICATION NUMBER: JP 2002-383870
PRIOR FILING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: 60/671,209
PRIOR FILING DATE: 2005-04-14
PRIOR APPLICATION NUMBER: 60/733,588
PRIOR FILING DATE: 2005-11-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: PENNELL, Roger I.
APPLICANT: DANG, David Vandinh
APPLICANT: APUYA, Nestor
TITLE OF INVENTION: Secondary Metabolite Production via Manipulation
TITLE OF INVENTION: Genome Methylation
ORGANISM: Oryza sativa
PUBLICATION INFORMATION:
DATABASE ACCESSION NUMBER: AK1100393
DATABASE ENTRY DATE: 2002-08-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/11/404,951
CURRENT FILING DATE: 2006-04-14
                                                                                                                                                              SOFTWARE: PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILE REFERENCE: 18207-005001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: Ceres PROMOTER ID no. p524d05
                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature
LOCATION: (1)..(1951)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      588 TCTCTCCCCTCTCCCTCCCGCAACACATTTTA 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGGGGTGGTGGGTGGCTATTTGTAGCGCCGTTGCGTGAAGCCCCGCGCGATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATATCGAACCTCCACCACCATACCTCACTTCA 567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTA 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGAGAGACTGCAGTTATTTGTGTCTTGAGATAGACAAAGAACTGAAGGAATGGTGAGA 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAAT 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6.8%;
50.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 45; DB 7;
Pred. No. 0.00076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1951;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        709
```

```
US-10-669-920-131/c
; Sequence 131, Application US/10669920
; Publication No. US20060194265A1
                                                                                             맑
                                                                                                                    á
                                                                                                                                                     밁
                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                         ; FEATURE:
, NAME/KBY: misc_feature
; LOCATION: (1)...(61009)
; OTHER INFORMATION: n = A,T,C or G
US-10-669-920-57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
US-10-669-920-57/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                              RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 57, Appublication No.
                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: US 10/322,696
PRIOR FILING DATE: 2002-12-17
NUMBER OF SEQ ID NOS: 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 10/004,113
PRIOR FILING DATE: 2001-10-23
PRIOR APPLICATION NUMBER: US 10/052,482
PRIOR FILING DATE: 2001-11-08
PRIOR APPLICATION NUMBER: US 09/997,722
                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 1441
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/10/669,920 CURRENT FILING DATE: 2003-09-23
                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE: 2001-11-30
PRIOR APPLICATION NUMBER: US 10/034,650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Malandro, Marc S.
TITLE OF INVENTION: NOVEL THERAPEUTIC TARGETS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Morris, APPLICANT: Malandr
                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                            ID NO 57
                                                                                                                                                                                                                           Local
                                                                                        APPLICATION NUMBER: US 10/087,192
FILING DATE: 2002-03-01
APPLICATION NUMBER: US 10/322,281
FILING DATE: 2002-12-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 2001-12-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 10/085,117 FILING DATE: 2002-02-27
                                                                                                                   315 CTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGT 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             132 TTTTTTGGCGATTCAGTGGGCGAA 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  436 CTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCC
                                                                                                                                                                                                               l Similarity
66; Conserv
                                                                                                                                                                                                                                                                                                                                                                               61009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATATTTTGCGGGAGGGTTGGTGAA 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/10669920
Wo. US20060194265A1
                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20366-066001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        David W.
                                                                                                                                                                                                                          62.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.5%;
                                                                                                                                                                                                            ; Score 42; DB 6; Pred. No. 0.041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 42.6;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                          0.041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0.0048;
                                                                                                                                                                                                                                         DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IN CANCER
                                                                                                                                                                                                               40; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64;
                                                                                                                                                                                                                                         Length 61009;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>,</u>
                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                     59807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193
                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
; FEATURE:
, NAME/KEY: misc feature
, LOCATION: (1)...(176594)
, OTHER INFORMATION: n = A
US-10-539-228-495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-539-228-495/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-669-920-131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/10/669,920
CURRENT FILING DATE: 2003-09-23
PRIOR APPLICATION NUMBER: US 10/004,113
PRIOR FILING DATE: 2001-10-23
PRIOR APPLICATION NUMBER: US 10/052,482
PRIOR FILING DATE: 2001-11-09
PRIOR FILING DATE: 2001-11-30
PRIOR APPLICATION NUMBER: US 09/997,722
PRIOR APPLICATION NUMBER: US 09/997,722
PRIOR APPLICATION NUMBER: US 09/997,722
PRIOR FILING DATE: 2001-11-30
PRIOR FILING DATE: 2001-11-30
                                                                                                                                                                            SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 495, Application US/10539228
Publication No. US20060154250A1
                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                            APPLICANT: David W. Morris
APPLICANT: Marc S. Malandro
TITLE OF INVENTION: Novel Compositions and Methods
FILE REFERENCE: CHIR0052-101 (PP023370.0003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/539,228
CURRENT FILING DATE: 2005-06-17
PRIOR APPLICATION NUMBER: US 10/322,281
PRIOR FILING DATE: 2002-12-18
                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 1441
SOFTWARE: FastSEQ for Wind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE: 2002-12 PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR FILING DATE: 2002-03-01
PRIOR APPLICATION NUMBER: US 10/322,281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE: 2002-02-27
PRIOR APPLICATION NUMBER: US 10/087,192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 10/034,650
PRIOR FILING DATE: 2001-12-20
PRIOR APPLICATION NUMBER: US 10/085,117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Morris, David W. APPLICANT: Malandro, Marc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: 20366-066001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: NOVEL THERAPEUTIC TARGETS
                                                                                                           TYPE: DNA
ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(132942)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: n =
                                                                                                                                                            LENGTH: 176594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENGTH: 132942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      111550 GAÁGTACÁGAGGÁTGTATGÁCCÁCT 111526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  450 GGAGTCAATGGCATGCGTGACGAAT 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAGAGAGAGAGAGAGAGAGAGAGAGATATTTGCTATCTACCAGAGTACACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Malandro,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2002-12-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2002-12-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Marc S.
                       A,T,C or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A,T,C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 10/322,696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ဝူ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 41.8; DB Pred. No. 0.07;
                       ດ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CANCER
                                                                                                                                                                                                                                                                                                                                                               ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 132942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

```
RESULT 11
US-11-266-748A-215547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 215547, Application US/11266748A Publication No. US20060134663A1
                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn version 3.3 SEQ ID NO 215547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Transcriptome Microarray Technology and TITLE OF INVENTION: Methods of Using the Same FILE REFERENCE: 55815-0102 (31918) CURRENT APPLICATION NUMBER: US/11/266,748A CURRENT FILING DATE: 2005-11-03
                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 483996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: EP 04105479.2 PRIOR FILING DATE: 2004-11-03
                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE:
                                                                                                                                                                                          NAME/KEY: misc_feature
LOCATION: (134)..(135)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                        FEATURE: misc feature NAME/KEY: misc feature LOCATION: (128)..(132) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                              NAME/KEY: misc feature LOCATION: (149)..(149)
                                                                                                                                                                                                                                                                                                                          ORGANISM: Homo Sapiens
                  NAME/KEY: misc_feature
LOCATION: (160)..(160)
                                                              OTHER INFORMATION: n is
                                                                              NAME/KEY: misc_feature
LOCATION: (152)..(152)
                                                                                                                            OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: EP 04105483.4 FILING DATE: 2004-11-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: EP 04105482.6 FILING DATE: 2004-11-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19504
                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 2005-03-14
APPLICATION NUMBER: US 60/700,293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 60/662,276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: EP 04105484.2 FILING DATE: 2004-11-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: EP 04105485.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: EP 04105507.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    391
 INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCATTTAAGAGCATTATTTTGAGAAGGGAATAGTGCCTTTCTCTCACTACCATAGGGC 19445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTTCCACTAAACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTGATTAATTTGGTGGGAAAAGCGACAGCCAACCCACAAAAAGGTCAGATGTCATCCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Johnston, Patrick
Mulligan, Karl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
               .. (160)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Paul
                                                                                                                                                                                                                                                                                                                                                                                                                         2005-07-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2004-11-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2004-11-03
                                                                                                                                                                                               18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.3%;
                                                                                                                                                                                             a,
                                                                                                                                                                                                                                                           a,
                                                               'n
                                                                                                                                                                                                                                                           ņ
 'n
                                                               ç
                                                                                                                             ç
                                                                                                                                                                                             ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 41.2; DB Pred. No. 0.13; 0; Mismatches
ō
                                                               á
                                                                                                                             á
                                                                                                                                                                                             á
                                                                                                                                                                                                                                                           á
   မ္ပ
                                                                   유
                                                                                                                               õ
                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 6; Length 176594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
NAME/KEY: misc_feature
LOCATION: (428)..(428)
OTHER INFORMATION: n is
                    NAME/KEY: misc_feature
LOCATION: (435)..(435)
OTHER_INFORMATION: n i
                                                                                               OTHER INFORMATION: n in FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
LOCATION: (364)..(364)
OTHER INFORMATION: n i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
NAME/KEY: misc_feature
LOCATION: (334)...(334)
OTHER_INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature
LOCATION: (234)..(234)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature LOCATION: (211)..(211)
NAME/KEY: misc_feature
                                                                                                                     NAME/KEY: misc feature LOCATION: (423)..(423)
                                                                                                                                                    OTHER INFORMATION: n is
                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (413)...(413)
                                                                                                                                                                                               OTHER INFORMATION: n is
                                                                                                                                                                                                         NAME/KEY: misc_feature
                                                                                                                                                                                                                                          OTHER INFORMATION: n is
                                                                                                                                                                                                                                                     NAME/KEY: misc_feature
LOCATION: (400)..(400)
                                                                                                                                                                                                                                                                                   OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature
LOCATION: (389)..(389)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc_feature
LOCATION: (368)..(368)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (351)..(351)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                         VAME/KEY: misc_feature
LOCATION: (392)..(392)
                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature
LOCATION: (268)..(268)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature
                                                                                                                                                               OCATION:
                                                                                                                                                                                                                                                    OCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION: n is
                     18
                                                                18
                                                                                                           18
                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
                     a,
                                                                                                                                                                                               a,
                                                                                                                                                                                                                                                                                    a,
                                                                                                                                                                                                                                                                                                                               a,
                                                                                                                                                                                                                                                                                                                                                                          ā
                                                                                                                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a,
                                                                                                           a
                                                                                                                                                                                                                                          a)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               þ
                     ú
                                                                O
                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                         ů
                                                                                                                                                                                                                                                                                                                                                                                                                    ū
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ú
                     á
                                                               á
                                                                                                          á
                                                                                                                                                    á
                                                                                                                                                                                              á
                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                              ģ
                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                      q
                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                           မ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                     ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ဝူ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ဇ္
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         မ္ပ
```

```
NAME/KEY: misc_feature
LOCATION: (458)..(458)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: (452)..(453)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (517)..(518)
OTHER INFORMATION: n is a
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATION: (465)..(466)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: (475) ... (475)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (470) . (470)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature LOCATION: (470)...(470)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature LOCATION: (497)...(497) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc feature LOCATION: (485)...(485) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: (480)..(480)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature
LOCATION: (480)..(480)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (475)..(475)
                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature LOCATION: (506)..(506) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (533)...(536)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature LOCATION: (509)..(509)
                                                                                                                        FEATURE:
NAME/KEY: misc_feature
LOCATION: (560)..(560)
OTHER INFORMATION: n is
                                                                                                                                                                                   NAME/KEY: misc_feature
LOCATION: (556)..(558)
                                                                                                                                                                                                                 FEATURE:
NAME/KEY: misc_feature
LOCATION: (552)..(554)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                             OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                       NAME/KEY: misc feature LOCATION: (547)..(547)
                                                                            NAME/KEY: misc_feature
LOCATION: (564)..(564)
OTHER INFORMATION: n is
                                                                                                              FEATURE
                                                                                                                                                                      OTHER INFORMATION: n is
                               NAME/KEY: misc feature
LOCATION: (569)..(570)
OTHER INFORMATION: n is
FEATURE:
NAME/KEY: misc feature
LOCATION: (576)..(579)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ם
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               þ
                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                         a,
                                                                                                                                                                                                                                                                                                             a,
                                                                                                                              a
                                                                                                                                                                          a,
                                                                                                                                                                                                                      ģ
                                                                                                                                                                                                                                                                 ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    o,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ū
                                                                                  a
~
                                    a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                           ú
                                                                                                                                                                                                                                                                                                                                                                                                       ņ
                                                                                                                                                                                                                                                                 ō
                                                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                      G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                          ņ
                                                                                                                              ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                      ó
                                                                                  ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                           ģ
                                                                                                                                                                                                                                                                                                              á
                                                                                                                              á
                                                                                                                                                                          á
                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       မ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                  ā
                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                or
                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                    မ္မ
                                                                                    S
                                        유
```

Ç

```
RESULT 12
US-11-266-748A-237674/c
US-11-266-748A-237674, Application US/11266748A
Publication No. US20060134663A1
Publication No. US20060134663A1
Publication No. US20060134663A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CUNKENUT ELLIANU MALE: AUVO-14-03

PRIOR APPLICATION NUMBER: EP 04105402.6

PRIOR APPLICATION NUMBER: EP 04105402.6

PRIOR APPLICATION NUMBER: EP 04105402.6

PRIOR APPLICATION NUMBER: EP 04105403.4

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR PRILING DATE: 2004-11-03

PRIOR APPLICATION NUMBER: EP 04105507.0

PRIOR APPLICATION NUMBER: EP 04105405.9

PRIOR APPLICATION NUMBER: EP 04105404.2

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Harkin, Paul
APPLICANT: Johnston, Patrick
APPLICANT: Mulligan, Karl
APPLICANT: Mulligan, Karl
TITLE OF INVENTION: Transcriptome Microarray Technology
TITLE OF INVENTION: Methods of Using the Same
TITLE REPERENCE: 55815-0102 (319189)
FILE REPERENCE: 15815-0102 (319189)
CURRENT APPLICATION NUMBER: US/11/266,748A
CURRENT FILING DATE: 2005-11-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn version 3.3 SEQ ID NO 237674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 2005-03-14
PRIOR APPLICATION NUMBER: US 60/700,293
PRIOR FILING DATE: 2005-07-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR FILING DATE: 2005-07-18
NUMBER OF SEQ ID NOS: 483996
                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)..(1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Homo Sapiens
                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: n is
                                                                                                                                                                                                                                                               NAME/KEY: misc_feature LOCATION: (7)..(7)
                                                                                                                                                                                                                                                                                                                          FEATURE:
NAME/KEY: misc_feature
LOCATION: (5)...(5)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                            COCATION: (7)..(7)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENGTH:
                                                                            NAME/KEY: misc_feature
LOCATION: (13)..(13)
OTHER INFORMATION: n i
                                                                                                                                                             OTHER INFORMATION: n is
                                                                                                                                                                                     NAME/KEY: misc_feature
LOCATION: (9)..(9)
                 NAME/KEY: misc_feature
LOCATION: (16)..(18)
OTHER INFORMATION: n
                                                                                                                                                                                   OCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   135 NGGG 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          450 GGAG 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6.2%;
nilarity 73.4%;
Conservative
        j.
                                                                                       18
                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                   a
        þ
                                                                                     a,
                                                                                                                                                                      a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                    ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 41; DB 8;
pred. No. 0.0083;
                                                                                                                                                                                                                                                                                                                                   ç
                                                                                       Ö
                                                                                                                                                                      ç
                                                                                                                                                                                                                                                    ú
        ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                      á
                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                     á
        á
                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                      읁
                                                                                                                                                                                                                                                           ç
                                                                                                                                                                          õ
             ç
                                                                                           8
                                                                                                                                                                            rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
```

```
PEATURE: misc feature LOCATION: (32)...(33)
                                                                          NAME/KEY: misc feature LOCATION: (132)...(132) OTHER INFORMATION: n is
                                                                                                               NAME/KEY: misc_feature
LOCATION: (127)..(127)
OTHER INFORMATION: n i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: (42)...(42)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: n is
          NAME/KEY: misc feature LOCATION: (144)..(144)
                                   NAME/KEY: misc feature LOCATION: (136)..(137)
                                                                                                                                                      LOCATION: (122)..(122)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (44)..(46)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                         OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OCATION: (48)..(50)
THER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OCATION: (38)..(38)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
OCATION: (144)..(144)
OTHER INFORMATION: n
                                                                                                                                                                AME/KEY: misc feature OCATION: (122)..(122)
                                                                                                                                                                                            VAME/KEY: misc feature LOCATION: (117)...(117)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
OCATION: (66)..(69)
                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JAME/KEY: misc_feature
JOCATION: (44)..(46)
                                                                                                                                                                                                                                  NAME/KEY: misc feature OCATION: (105)...(105)
                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature
OCATION: (96)..(96)
                                                                                                                                                                                                                                                                                                                                                   THER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                             OCATION: (84)..(85)
                                                                                                                                                                                                                                                                                                                                                                                                                                          AME/KEY: misc_feature OCATION: (55)..(55)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AME/KEY: misc_feature
OCATION: (48)..(50)
                                                                                                                                                                                                                                                                                                                                                                                        THER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                AME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                           (93
                                                                                                                                                                                                                                                                                                                           (93)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       n is
 18
                                                                                                                  18
                                                                                                                                                                                                                                    a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                            a,
                                                                                                                  a
                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                a,
                                                                                                                                                                                                                                                                                                                                                     a,
                                                                                                                                                                                                                                                                                                                                                                                            a,
                                                                                                                                                                                                                                                                                                                                                                                                                                 a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                       a,
                                                                                                                                                                                             a
 a
,
                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ņ
                                                                                                                                                       'n
                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                         ú
                                                                                                                                                                                                                                                                                                                ç
                                                                                                                                                                                                                                                                                                                                                     ú
                                                                                                                                                                                                                                                                                                                                                                                           'n
                                                                                                                                                                                                                                                                                                                                                                                                                                 ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ú
 ņ
                                     Ç
                                                                            ç
                                                                                                                 ú
                                                                                                                                                                                            Ġ
 ú
                                     á
                                                                            á
                                                                                                                 á
                                                                                                                                                       á
                                                                                                                                                                                            á
                                                                                                                                                                                                                                   ā
                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                or
                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
 õ
                                       မ္ပ
                                                                             õ
                                                                                                                                                        õ
                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ct
                                       ct
                                                                                                                                                                                                                                                                                                                rt
                                                                                                                                                                                                                                                                                                                                                       d
```

```
NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature LOCATION: (149)...(150) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
LOCATION: (195)..(195)
OTHER INFORMATION: n i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature
LOCATION: (167)...(167)
OTHER INFORMATION: n is
                                                               NAME/KEY: misc feature LOCATION: (368)...(368) OTHER INFORMATION: n is
                                                                                                                                                    PEATURE:
NAME/KEY: misc feature
LOCATION: (273)..(273)
OTHER INFORMATION: n i
                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature LOCATION: (210)...(210) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc_feature
LOCATION: (202)..(202)
OTHER INFORMATION: n i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc feature LOCATION: (189)..(189) OTHER INFORMATION: n i
                                                                                                           NAME/KEY: misc_feature LOCATION: (334)..(334) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature LOCATION: (238)...(238) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (204)...204)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COCATION: (179)..(179)
OTHER INFORMATION: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (174)...(174)
OTHER INFORMATION: n is
                                                      FEATURE:
                                                                                                                                                                                                LOCATION: (268)..(268)
                                                                                                                                                                                                              NAME/KEY: misc_feature
LOCATION: (268)..(268)
                                                                                                                                                                                                                                            OTHER INFORMATION: n is
                                                                                                                                                                                                                                                       NAME/KEY: misc feature LOCATION: (251)..(251)
                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature LOCATION: (234)..(234)
                                                                                                                                                                                                                                                                                                                                                                              LOCATION: (213)..(213)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
LOCATION: (213)..(213)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature LOCATION: (204)..(204)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature
COCATION: (179)..(179)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
LOCATION: (174)..(174)
                                misc_feature
(381)..(381)
                                                                                                             18
                                                                                                                                                        18
                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18
6.2%;
                                                                 a,
                                                                                                            a,
                                                                                                                                                                                                                                                                                        a,
                                                                                                                                                                                                                                                                                                                                   ā
                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                          a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gu
'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a,
                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ú
                                                                ç
                                                                                                            ņ
                                                                                                                                                                                                                                            ú
                                                                                                                                                                                                                                                                                        ņ
                                                                                                                                                                                                                                                                                                                                   ú
                                                                                                                                                                                                                                                                                                                                                                               ú
                                                                                                                                                                                                                                                                                                                                                                                                                          ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ū
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ū
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ū
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ū
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                               á
                                                                                                            Ó
                                                                                                                                                     á
                                                                                                                                                                                                á
                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                  ö
                                                                                                              ဝူ
                                                                                                                                                        유
                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                      or
R
                                                                                                                                                                                                                                                                                                                                                                               or
                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
  No.
  , DB 8;
           Length 601;
```

Query Match Best Local Similarity

Score Pred.

```
Sequence 585, Application US/10540898
; Sequence 585, Application W. US20060166213A1
; Publication No. US20060166213A1
; Publication No. US20060166213A1
; Papplicant: Neverice Compositions and Methods in Cancer Title Of INVENTION: Novel Compositions and Methods in Cancer Title Reference; CHIRRO156-101 (PP023367.0003)
; FILE REFERENCE; CHIRRO156-101 (PP023367.0003)
; FULL REFERENCE; CHIRRO156-101 (PP023367.0003)
; CURRENT APPLICATION NUMBER: US/10/540,898
; CURRENT FILING DATE: 2005-66-27
; PRIOR APPLICATION NUMBER: US 10/330,773
; PRIOR APPLICATION NUMBER: US 10/330,773
; PRIOR APPLICATION NUMBER: US 10/330,773
; PRIOR FILING DATE: 2002-12-27
; NUMBER OF SEQ ID NOS: 981
; SEQ ID NO 585
; SEQ ID NO 585
; LENGTH: 100610
TYPE: DNA
ORGANISM: Mus musculus
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(103464)
OTHER INFORMATION: n = A,T,C or
US-10-539-228-323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 13
US-10-540-898-585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-540-898-585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-539-228-323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local 9
                                                                                                                                               APPLICANT: David W. Morris
APPLICANT: David W. Morris
APPLICANT: Marc S. Malandro
APPLICANT: Marc S. Malandro
APPLICANT: Marc S. Malandro
APPLICANT: Marc S. Movel Compositions and Methods in Cancer
FILLE REFERENCE: CHIRO052-101 (PP023370.0003)
FILE REFERENCE: CHIRO052-101 (PP023370.0003)
CURRENT APPLICATION NUMBER: US/10/539,228
CURRENT FILING DATE: 2005-06-17
PRIOR APPLICATION NUMBER: US 10/322,281
PRIOR FILING DATE: 2002-12-18
NUMBER OF SEQ ID NOS: 866
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 323
SEQ ID NO 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                            Sequence 323, Appublication No.
                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(100610)
OTHER INFORMATION: n = A,T,C or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                   ENGTH: 103464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
les 57; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35258 AGAGTTTATTGTAGCTATGAGGGA 35281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  390 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              450 GGAG 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            467 NGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGTCAATGGCATGCGTGACGAA 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĊĀĊĠĊŦĊŢĊĊŢĀĠĠŢĠĀŢŢĠĀŢĠĀĠĠĠŢ 35257
                                                                                                                                                                                                                                                                                                                                                                                Application US/10539228
o. US20060154250A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 40.8; DB Pred. No. 0.13;
                                 ဝူ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 100610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
GENERAL INFORMATION:
APPLICANT: Morris, David W.
APPLICANT: Malandro, Marc S.
APPLICANT: Lai, Albert
APPLICANT: Tse, Christin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15

US-10-833-833-77/c

US-10-833-833-77/c

; Sequence 77, Application US/10833833

; Publication No. US20060194210A1
                                                                                                                                                                                                                                                                        FEATURE:
NAME/KBY: misc_feature
LOCATION: (1) (1320443)
CTHER INFORMATION: n = A
US-10-833-833-77
                                                                                                                                     Ś
                                                                                                                                                                뭉
                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                             á
                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                         밁
Search completed: November Job time: 145.489 secs
                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 175
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 77
                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Lai, Albert
APPLICANT: Tae, Christin
APPLICANT: Tse, Christin
APPLICANT: Fattaey, Ali
APPLICANT: Fattaey, Ali
APPLICANT: POSE THERAPEUTIC TARGETS IN CANCER
FILE REFERENCE: 20366-038001
CURRENT APPLICATION NUMBER: US/10/833,833
CURRENT FILING DATE: 2004-04-27
NUMBER: 2004-04-27
                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 76; Conserv
                                                                                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                       ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74634 GAGAGAGAGAGAGAAACGGGGGGÁAGGACACTTGAAGTACACACÁGAGAGAGAGAGAGA
                                                      1252495 GAGTGAGTATAATTT
                                                                                                          1252615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       404 GAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64;
                                                                                                                                         363
                                                                                                                                                                                         303 стесстатттететелесттесаталасестватталтттестведалалесваслоссла
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      h 6.2%;
Similarity 62.1%;
64; Conservative
                                                                                                                                                                                                                                                                                                                                                                         1320443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠAGAAGAAAAĀĀACŤŤAŤĠAAŤĊĀĊĊĠ 74736
                                                                                                                                     ĊŢĊŢĊŢĊŢŢĀŢĊŢĊŢĊĀŢĀĊĀĊĀĊĀĊĀĊĀĊĀCĀCĀCĀĢĠĠĠĠĠĠĠĠĠĠĠĀĠĀĠĀĀĀĠĀĀĀĢĠĠ 1252556
                                                                                   TTCTCTCTATATTCT 437
                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                       6.2%;
                                                                                                                                                                                                                                                                                        Α,
                                                                                                                                                                                                                                                                                              ú
                                                              1252481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 40.6; DB 6;
Pred. No. 0.15;
0; Mismatches 39;
                    2006, 14:52:54
                                                                                                                                                                                                                                                                                              e,
                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                        Score 40.6; DB 6;
Pred. No. 0.55;
                                                                                                                                                                                                                                                                                              or T/U
                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39;
                                                                                                                                                                                                                                 59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 103464;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                           Length 1320443;
                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                            362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                       0
```

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                               Database :
                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM nucleic - nucleic search, using sw model
                                                                                                                                                                    GenEmbl:*
1: gb_env:
2: gb_pat:
3: gb_ph:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-702-319A-113_COPY_1019_1643
625
    55...
66...
77...
10...
113...
113...
                                                                                                                                                                                                                                                                                                                                                                                           IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                6366136 seqs, 31973710525 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ctgagccatttaattcgaga.....tttgctcgagtctcgcggaa 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            October 31, 2006, 23:27:09 ; Search time 3570.42 Seconds (without alignments)
11193.945 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
gb_sts:
gb_un:
gb_vi:
gb_vi:
gb_ov:
gb_ov:
gb_ov:
gb_on:
gb_om:
gb_ba:
gb_ba:
                                                                                                                                                    gb_env:*
gb_pat:*
gb_ph:*
                                                                                                                                                                                                                                                                                                                                         12732272
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Query Query Match Length	DB	ID	Description
ь	625	100.0	3070	N	AR360987	AR360987
2	606.2	97.0	661	N	BD262120	BD262120
ω	606.2	97.0	661	N	AR360905	AR360905
4	606.2	97.0	2096	N	BD262168	BD262168
ທ	606.2	97.0	2096	N	AR360953	AR360953
თ	53.2	8.5	249121	12	AC096843	AC096843 Rattus no
c 7	50.2	8.0	198450	12	AC110357	AC110357
ი 8	50.2	8.0	218614	12	AC123243	AC123243
9	50.2	8.0	252137	12	AC107438	AC107438
c 10	50	8.0	193795	12	AC069535	AC069535
c 11	49.4	7.9	5235	12	AC012735	AC012735 Drosophi
12	49.4	7.9	5626	N	CQ591632	CQ591632 Sequence
13	49.4	7.9	137544	12	AC018487	AC018487 Drosophi
14	49.4	7.9	165118	13	AC018488	AC018488 Drosophi
15	49.4	7.9	182416	13	AC022345	AC022345 Drosophi
c 16	49.4	7.9	204000	σ	AC136645	AC136645 Rattus no
17	49.4	7.9	341520	13	AE003498	AE003498 Drosophi
2 18	49	7.8	74587	л	HSDJ90205	AL109750 Human DNA

	a	ი			ი		ი		ი		ი		ი		Ω	ი		•••	ი			ი		Ω		Ċ
5	44	43	42	41	40	39	38	37	36	35	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20	TA
46.4	46.4	46.6	46.6	46.8	46.8	47	47	47	47	47	47.2	47.2	47.4	47.4	47.4	47.4	47.4	47.6	47.6	47.6	48	48	48	48.2	48.8	40.0
7.4 215042	7.4 21686	7.5 175675	7.5 172527	7.5 220614	7.5 215689	7.5 234378	7.5 194657	7.5 156084	7.5 151930		7.6 178590	7.6 166104	7.6 267468	7.6 231007	o	7.6 167483	7.6 127293	თ	.6 192	7.6 231	7.7 298672	7.7 244684	7.7 230763	7.7 231530	7.8 248722	1.0 441149
12 AC136823	13 AY578801	12 AC166024	12 AC181183	12 AC094779	12 AC111687	12 AC145304	14 AC124042	6 AC166746	12 AC161531	12 AC175741	12 AC132894	6 AC155311	12 AC112812	12 AC141028	12 AC105920	5 AC115540	12 AC026917	12 AL590310	6 AL671782	4 AJ865169	12 AC108330	12 AC114841	12 AC129875	6 AL671975	12 AC095781	TZ MCUSTO/O
AC136823 Rattus no	AY578801 Anopheles	AC166024 Oryctolag	AC181183 Strongylo	AC094779 Rattus no	AC111687 Rattus no	AC145304 Mus muscu	AC124042 Oryctolag	AC166746 Mus muscu	AC161531 Mus muscu	AC175741 Mus muscu	AC132894 Mus muscu	AC155311 Mus muscu	AC112812 Rattus no	AC141028 Rattus no	AC105920 Homo sapi	AC115540 Homo sapi	AC026917 Homo sapi	AL590310 Homo sapi	AL671782 Mouse DNA	AJ865169 Cocos nuc	AC108330 Rattus no	AC114841 Rattus no	AC129875 Rattus no	AL671975 Mouse DNA	AC095781 Rattus no	ארטאנטיט אמרנישם ווט

ALIGNMENTS

Q	DB QY	D Qy	D Qy	Query M Best Lo Matches	RESULT 1 AA360987 LOCUS DEFINITION ACCESSION VERSION VERSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS TITLES TITLES TOURNAL FEATURES SOURCE ORIGIN
181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 240	121 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180	61 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120	1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT 60	Query Match 100.0%; Score 625; DB 2; Length 3070; Best Local Similarity 100.0%; Pred. No. 1.2e-193; Matches 625; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	AR360987 JITION Sequence 113 from patent US 6596925. SION AR360987 ON AR360987.1 GI:33768497 RDS Unknown. ANISM Unknown. Unclassified. Unclassified. ENCE 1 (bases 1 to 3070) HORS Compositions and methods for the modification of gene expression genesis Research & Development Corp. Ltd. and Rubicon Forests Holdings Ltd.; Parmell; NZX; Location/Qualifiers Source /organisms="unknown" /mol_type="genomic DNA"

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 2
BD262120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                      FEATURES
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                       Eucalyptus grandis

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;

rosids; Myrtales; Myrtaceae; Eucalyptus.

1 (bases 1 to 661)

RS Ferera,R., Rice,S.J. and Eagleton,C.K.

Composition and methods for the modification of gene expression

AL Patent: JP 2002539834-A 12 26-NOV-2002;

GENESIS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE

FORESTS INDUSTRIES LTD

OS Eucalyptus grandis (flooded gum)

JP 2002539834-A/12

PD 26-NOV-2002

PF 24-FEB-2000 JP 2000608755

PF 24-FEB-2000 JP 2000608755

PF 24-FEB-2000 JP 2000608755

PROCESSION CONTRACT OF LTD PROCESSION DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT OF LETTON DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTRACT DE CONTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                         RANJAN
C12N15/
C12N15/
PC C1
CC CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BD262120
Composition and methods
BD262120
BD262120.1 GI:33071888
                                                                                                                                                                                                                 777X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JP 2002539834-A/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAACCTCCACCATACCTCACTTCAATCCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACCTCCACCATACCTCACTTCAATCCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTCCTTTGCTCGAGTCTCGCGGAA 1643
                                                                                                                                                                                                         TATA_ signal
                                                                                                                                                                                                                                                                                                                                                                                           24-FEB-2000 JP 2000608755
25-MAR-1999 US 09/276599,30-JUL-1999
N PERERA,STEPHEN J RICE,CLARE KATHERINE
5/09,A01H5/00,C07K14/415,C12N5/10,C12Q1/
                                                                                                                                                                                                                                                                                                        expression
                                                                                                                                                                                                                                                                                                                         Composition
                                                                                                                                                                                                                                                                                                                                                       C12N5/00
                                                                                       /organism="Eucalyptus grandis"
/mol_type="genomic DNA"
/db_xref="taxon:71139"
                                                                                                                                                              1. .661
                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                  signal
  97
  . 9%;
                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                         (1)...(654)
(537)...(543)
(499)...(502).
                                                                                                                                                                                                                                                                                                                                 methods for the modification
                                                                                                                                                                                                                                                                                  Location/Qualifiers
  Score 606.2; DB 2;
Pred. No. 1.1e-187;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA linear modification of ge
                        Length
                                                                                                                                                                                                                                                                                                                                                                                                9 US 60/146591
E EAGLETON PC
1/02,C12Q1/68, PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT 17-JUL-2003
                                                                                                                                                                                                                                                                                                                                   გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
```

```
RESULT 3
AR360905
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                         KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                       당
                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                   REFERENCE
                                                                                                FEATURES
                                                                                                                                              AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
Query Match
Best Local Similarity
Matches 622; Conserv
                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                    597
                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                     537
                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      622;
                                                                                                                                                                                                                                                         AR360905
Sequence
AR360905
                                                                                                                      1 (bases 1 to 661)
Perera,J.R., Eagleton,C. and Rice,S.J.
Compositions and methods for the modification of gene eatent: US 6596925-A 12 22-JUL-2003;
Genesis Research & Development Corp. Ltd. and Rubicon Holdings Ltd.; Parnell;
                                                                                                                                                                                                          Unknown
                                                                                                                                                                                                                      Unknown
                                                                                                                                                                                                                                               AR360905.1
                                                                                                            XZX;
                                                                                                                                                                                             Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATGATCTTGGAGTTGTTGGTGCAAAITTTGCAAGCTGACGATGGCCCCTCAGGGAAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ARCTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                              TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                            TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATATTGGTGTAGGGTCCAATATTTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                               CTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                           CTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
97.0%;
ilarity 98.9%;
Conservative
                                                                                                                                                                                                                                                                       12
                                                                                    1. .661
                                                                                                Location/Qualifiers
                                                          /organism="unknown"
/mol_type="genomic
                                                                                                                                                                                                                                               GI:33768415
                                                                                                                                                                                                                                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
Score 606.2; DB 2;
Pred. No. 1.1e-187;
0; Mismatches 3;
                                                                                                                                                                                                                                                                      661 bp
US 6596925.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                              DNA"
                                                                                                                                                                                                                                                                                                                                                                       625
                                                                                                                                                                                                                                                                                                                                                629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                     linear
                          Length
                            661;
                                                                                                                                                                                                                                                                                     PAT 17-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                600
                                                                                                                                                                                                                                                                                                                                                                                                                         596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
```

4.

Gaps

1;

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
BD262168
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                  KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                        COMMENT
                                                                                                                                                                                    TITLE
JOURNAL
Eucalyptus grandis
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyt
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyt
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledon
rosids; Myrtales; Myrtaceae; Eucalyptus.

E 1 (bases 1 to 2096)
S Perera,R., Rice,S.J. and Eagleton,C.K.
Composition and methods for the modification of gene expression
Composition and methods for the Proceedings (Composition and DEVELOPMENT CORP LTD, FLETCHER CHALLENGE
FORESTS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE
GENESIS RESEARCH AND DEVELOPMENT CORP LTD, FLETCHER CHALLENGE
FORESTS INDUSTRIES LTD
OS Eucalyptus grandis (flooded gum)
PN JP 2002539834-A/60
PN JP 2002539834-A/60
PP 24-FEB-2000 JP 2000608755
PR 25-MAR-1999 US 09/276599,30-JUL-1999 US 60/146591 PI
RANJAN PERERA, STEPHEN J RICE, CLARE KATHERINE EAGLETON PC
C12N15/00, A01H5/00,C07K14/415,C12N5/10,C12Q1/02,C12Q1/68, PC
C12N15/00,A01H5/00,C07K14/415,C12N5/10,C12Q1/02,C12Q1/68, PC
C12N15/00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ш
                                                                                                                                                                                                                                                                                                                                                                 BD262168
Composition and methods
BD262168
                                                                                                                                                                                                                                                                                                                                  JP 2002539834-A/60.
                                                                                                                                                                                                                                                                                                                                                 BD262168.1 GI:33071936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTATGATCTTGGAGTTGTTGGTGCAAATTTTGCAAGCTGACGATGGCCCCCTCAGGGAAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATCGAACCTCCACCACCATACCTCACTTCAATCCCCCACCATTTATCCGTTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCGTAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                  2096 bp
for the
                                                                                                                                                                                                                                                                                                                                                                              modification of gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  629
                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                  Embryophyta; Tracheophyta; edons; core eudicotyledons;
                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                  PAT 17-JUL-2003
                                                                                                                                                                                                  expression
                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
      REFERENCE
AUTHORS
```

```
RESULT 5
AR360953
LOCUS
 SOURCE
ORGANISM
                                DEFINITION
ACCESSION
VERSION
                                                                                                                                                             밁
                                                                                                                                                                               S
                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                      S
                                                                                                                      음 성
                                                                                                                                                                                                        吊
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 622;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                      641
                                                                                                                                          597
                                                                                                                                                                581
                                                                                                                                                                                    537
                                                                                                                                                                                                         521
                                                                                                                                                                                                                               477
                                                                                                                                                                                                                                                    461
                                                                                                                                                                                                                                                                          417
                                                                                                                                                                                                                                                                                               401
                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                         341
                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                   281
                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                              221
                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41
                                         AR360953
Sequence
AR360953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Н
Unknown
            Unknown
                                AR360953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   김김포
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGAGCCATTTAATTCGAGAGACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                             TATCGAACCTCCACCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                     ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                            AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGACGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                      CIGCITICCITIGCICGAGICICGCGGAA
                                                                                                                                 CTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                         ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                     AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                               AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                               AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                     AACTCCGTATTTCTCTCACTTCCATAAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                    ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       expression
Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Composition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism='Eucalyptus
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Eucalyptus
/mol_type="genomic DNA
/db_xref="taxon:71139"
                                                       from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97.0%;
98.9%;
                                                     patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and methods for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 606.2; DB 2;
Pred. No. 1.6e-187;
0; Mismatches 3;
                                                      2096 bp
US 6596925.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               grandis"
                                                                                                                                          625
                                                                                                                      669
                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             modification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (flooded
                                                                  PAT 17-AUG-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ဌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gum)'
                                                                                                                                                                                                                               536
                                                                                                                                                                                                                                                                            476
                                                                                                                                                                                                                                                                                                                     416
                                                                                                                                                                                                                                                                                                                                          400
                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                   340
                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                 640
                                                                                                                                                                                                                                                     520
                                                                                                                                                                                                                                                                                                460
                                                                                                                                                                                                                                                                                                                                                                                                                              280
                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         220
```

Unclassified.
1 (bases 1 to 2096)
Perera,J.R., Eagleton,C.

and Rice,

Ø

```
RESULT 6
AC096843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEATURES
                                                                                                                                   DEFINITION
                                                                                                                                                   Locus
                                                                        KEYWORDS
                                                                                        VERSION
                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                                                     581
                                                                                                                                                                                                                                                                                                                 537
                                                                                                                                                                                                                                                                                                                                              521
                                                                                                                                                                                                                                                                                                                                                                                                       461
                                                                                                                                                                                                                                                                                                                                                                                                                                   417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       622;
                                                                                                                                                                                                                           641
                                                                                                                                                                                                                                                                                                                                                                            477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Compositions and methods for the modification of gene expression Patent: US 6596925-A 60 22-JUL-2003; Genesis Research & Development Corp. Ltd. and Rubicon Forests
                                         AC096843
AC096843.4 GI:24941328
HTG; HTGS_PHASE1; HTGS_DRA
Rattus norvegicus (Norway)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Holdings Ltd.; Parnell;
                                                                                                                                   AC096843 249121 bp Rattus norvegicus clone CH230-2K10,
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Rattus.
                                                                                                                     4 unordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                        AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAAGCGACAGCC
                                                                                                                                                                                                                             CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 669
                                                                                                                                                                                                                                                   CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                     TATEGAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                       TATCGAACCTCCACCACATACCTCACTTCAATCCCCCACCATTTATCCGTTTTATTTCCT 596
                                                                                                                                                                                                                                                                                                                                                                        ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                         AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="unknown"
/mol_type="genomic
                                                                                                                     pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97.0%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 1.6e-187;
                                                                        DRAFT; HTGS_ENRICHED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA"
                                                                                                                                     DNA linear
, *** SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                     HTG 13-NOV-2002
IN PROGRESS ***,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220
                                                                                                                                                                                                                                                                                                                                                 580
                                                                                                                                                                                                                                                                                                                                                                               536
                                                                                                                                                                                                                                                                                                                                                                                                            520
                                                                                                                                                                                                                                                                                                                                                                                                                                        476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                         640
```

COMMENT

Web site: http://www.hgsc.bcm.tmc.edu/Contact: hgsc-help@bcm.tmc.edu

Center code: BCM Center: Baylor

College

of Medicine

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UCLE 1 (DASES 1 TO 249121)

RICK MUZNYD, M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C., Alisbrooks, S.L., Amaratunge, H.C., Are, J.R., Ayele, M., Banks, T., Alisbrooks, S.L., Amaratunge, H.C., Are, J.R., Ayele, M., Banks, T., Barbooks, S.L., Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J., Bowie, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Buck, J., Chen, G., Chen, G., Chen, G., Chen, G., Chen, R., Chen, Z., Chowdhry, I., Christopoulos, C., Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., David, R., Davila, M.L., Davis, C., Denn, A.L., Dederich, D., Dathh, H.H., Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J., Davila, M.L., Davis, C., Denn, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J., C., Escotto, M., Earnhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Bscotto, M., Earnhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Bscotto, M., Earnhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Bscotto, M., Correll, J.H., Gavera, W., Gunaratne, D., Hale, S., Hamilton, K.J., Gabis, A., Gao, J., Garcia, A., Garner, T., Garza, N., Gill, R., Gabis, A., Gao, J., Garcia, A., Garner, T., Garza, N., Lerin, R., Hernandez, J., Homsol, F., Howard, S., Huber, J., Hayla, K., Hume, J., Jackson, L.E., Harris, C., Harris, K., Hart, M., Hayla, K., Hume, J., Jackson, L.E., Harris, C., Harris, K., Hart, M., Hayla, K., Hume, J., Jackson, L.E., Lozado, R., J., Landry, N., Louier, R., Joudah, S., Kalay, J., Kalay, J., Kalay, J., Kovar, C., Kratovic, J., Klaris, K., Landry, N., Louier, R., Luna, R., Ma, J., Lozado, R., Martinez, E., Mahselbar, J., Martinez, E., Massey, E., Mawhiney, E., McLeod, M.P., Meador, M., Meil, C., Metzer, M., Massey, E., Mawhiney, E., McLeod, M.P., Meador, M., Metzer, J., Peters, L., Pickens, R., Primus, B., Pu, L. L., Quiles, M., Ren, Y., Perez, L., Paylor, T., Tolfe, M., Ruiz, S., Savery, G., Soherer, S., Soher, P., Sohake, T., Shoshhat, A., Thomas, N., Thomas, S., Stone, H., Shoshhat, R., Morley, K., Mard, More, S., Morley, K.,
Submitted (13-NOV-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Nov 13, 2002 this sequence version replaced gi:23195686.
On Nov 13, 2002 this sequence version replaced gi:23195686.
The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bem.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, and separated individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence only contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Worley,K.C.
Direct Submission
Submitted (28-SEP-2001) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Worley, K.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 249121)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 249121)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 249121)
```

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                     137889 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGATCTGTGTATCAGATTACAAAGAGCTT 137948
                                                                                                                                                                                                                                                                          390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT 449
                                                                                                                                                              450 GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTTGCGGGA S09
                                                                                                                                                                                                                                                                                                                                     109;
                                                                                                                                                                                                                                                                                                                                                               Similarity 54.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank draft_data.) NOTE: This is a 'working draft' sequence. It currently consists of 4 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
GGTTGGCTGGTCAGCAAACTTCCAGCATCTGCCCATTTCTACACTGGGGTTCCATTCATG 138068
                                                                                                            ATAATTTCTTATTTTCTTGAGACAGGGTCTTCTTGGTTTAGAAGCTCACTGTTTGGCTTA 138008
                                                    GGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCATACCTCACTTCAAT 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center project name: TURZ
Center clone name: CH230-2K10
Center clone name: CH230-2K10
Center clone name: CH230-2K10
Center clone name: CH230-2K10
Censembly program: Phrap; version 0.990329
Censensus quality: 203544 bases at least Q40
Censensus quality: 208066 bases at least Q20
Censensus quality: 210898 bases at least Q20
Censensus quality: 210898 bases at least Q20
Estimated insert size: 204933; sum-of-centigs estimation
Quality coverage: 6x in Q20 bases; sum-of-centigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244605
244705
245851
245951
                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (4295. . 4944)
/note="clone_boundary
clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="wgs_end_extension clone_end:T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /estimated_length=unknown
247066. .247165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       108\overline{2}47...109420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone_end:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        244605. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="wgs_contig"
244605. .244704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="wgs_contig"
191277. .192386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="wgs_end_extension
clone_end:T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           estimated_length=unknown/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                estimated_length=unknown
245851. .245950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="taxon:10116"
/clone="CH230-2K10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           244604: contig of 244604 bp in length
244704: gap of unknown length
245850: contig of 1146 bp in length
245950: gap of unknown length
247065: contig of 1115 bp in length
247165: gap of unknown length
249121: contig of 1956 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence:BH288263"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _type="genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Project Information
                                                                                                                                                                                                                                                                                                                               Score 53.2; DB 12; Length 249121; Pred. No. 7.1e-05; 0; Mismatches 93; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _data.html).
                                                                                                                                                                                                                                                                                                                                     Gaps
```

δ 밁 8 밁

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
AC110357/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뭉
   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POC. N
                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                     Anjelbechi, V., Anjeli, A., Ayodeji, M., Baca, B., Baden, H., Anyalechchi, V., Ayodeji, M., Baca, B., Baden, H., Baldwin, D., Bandaranalke, D., Barber, M., Barnstead, M., Benahmed, F., Biswalo, K., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bryant, N., Bhay, C., Burch, P., Burrell, K., Calderon, E., Cher, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, C., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Call, R., Care, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, R., Chen, Y., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z., Chen, Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    138069 CACAGCCATGCACAGCATTTTT 138090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   570 CCCCACCATTATCCGTTTTAT 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Muzny, D. Marie., Metzker, M. Lee., Abramzon, S., Adams, C., Alder, J., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus norvegicus (Norway rat)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC110357 198450 bp DNA linear HTG 11-OCT-:
Rattus norvegicus clone CH230-276M2, *** SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG; HTGS_PHASE2; HTGS_DRAFT; HTGS_ENRICHED
                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sciurognathi; Muroidea; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC110357.4 GI:23602932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 198450)
(bases 1 to 198450)
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                     misc_feature
                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (11-OCT-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Oct 9, 2002 this sequence version replaced gi:21740885.

The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projecte/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence only contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (11-FEB-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                table.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/enbank_draft_data.)
NOTE: This is a 'working draft' sequence. It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 198450)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Center project name: GRMU

Center clone name: CH230-276M2

Center clone name: CH230-276M2

Assembly program: Phrap; version 0.990329

Consensus quality: 185474 bases at least Q30

Consensus quality: 186421 bases at least Q30

Consensus quality: 187015 bases at least Q20

Consensus quality: 187015 bases at least Q20

Estimated insert size: 190265; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality coverage: 6x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Web site: http://www.hgsc.bcm.tmc.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center: Baylor College of Medicine Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the finished sequence as soon as it is available and e accession number will be preserved.

1 198450: contig of 198450 bp in length.
                                                                                              end_sequence:RXAFV73TJ"
195129. .196333
                                                                                                                                                                                                190615. 191450
/note="clone_boundary
clone_end:T7
                                                                                                                                                                            gite:MboI
                                                                                                                                                                                                                                                                                                                                           site:MboI
                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="wgs_end_extension
clone_end:Sp6"
6304 __6850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                     /note="wgs_end_extension
clone_end:T7"
                                                                                                                                                                                                                                                                                                                                                                                              note="clone_boundary"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone="CH230-276M2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="genomic DNA"
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -- Genome Center
                                                                                                                                                                                                                                                                                           sequence: RXAFV73TV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _data.html).
```

```
RESULT 8
AC123243/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
RS MIZEND, Marie, Metzker, M. Lee., Abramzon, S., Adams, C., Alder, J., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Benahmed, F., Biswalo, K., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bernatead, M., Benahmed, F., Biswalo, K., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bernatead, M., Benahmed, F., Biswalo, K., Buhay, C., Burch, P., Burrell, K., Calderon, B., Cracken, S., Chen, Y., Chen, Y., Chen, Z., Chu, J., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Davis, C., Davis, C., Davy-Carroll, L., De Anda, C., Dederich, D., Davis, C., Davis, C., Dany, A., Durbin, K., Duval, B., Eaves, K., Draper, H., Duyan, R., Carcia, A., Garner, T., Garra, M., Foster, M., Egente, C., Evans, C.A., Falls, T., Fan, G., Egan, A., Becotto, M., Eugene, C., Evans, C.A., Falls, T., Fan, G., Egan, A., Becotto, M., Eugene, C., Evans, C.A., Falls, T., Fan, G., Garrathe, P., Haaland, W., Hamil, C., Hamilton, C., Hamilton, K., Frarey, Y., Havlak, P., Hawes, A., Henderson, N., Hernandez, J., Herrandez, J., Houghis, S., Hladwn, S. L., Hodgson, A., Hogues, M., Hollins, B., Howells, S., Hulyx, S., Khan, Z., King, L., Kovar, C., Kowis, C., Kraft, C.L., Lobow, H., Lorado, R., J., Lohnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14340 AATTTAÄTTCCCÄÄTGCAAÄAGÄÄTTGGCÄÄÄATGGTCTGTGTTTTÄATATTTTACAGG 14282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         390 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC123243.4 GI:25072880
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sciurognathi; Muroidea; Muridae; Murinae; Rattus. 1 (bases 1 to 218614)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unordered pieces.
AC123243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC123243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTGTAGGGTCCAATATTTTGCGGG 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGATACATGCTATGGTCTGAATGTGTGGTA 14341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="wgs_end_extension
clone_end:T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 50.2; DB 12
Pred. No. 0.00064;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         218614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18614 bp DNA linear
CH230-31P19, WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 198450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG 19-NOV-2002
SEQUENCE, 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                 gap
                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (19-NOV-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Nov 19, 2002 this sequence version replaced gi:23269886.
The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence may extend beyond the ends of the clone and there may be sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (29-MAY-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Valas,R., Vera,V., Villasana,D., Waldron,L., Walker,B., Wang,J., Wang,Q., Wang,S., Warren,J., Warren,R., Wei,X., White,F., Williams,G., Willson,R., Wleczyk,R., Wooden,H., Worley,K., Wright,D., Wright,R., Wu,J., Yakub,S., Yen,J., Yoon,L., Yoon,V., Yu,F., Zhang,J., Zhou,J., Zhou,X., Zhao,S., Dunn,D., von Niederhausern,A., Weiss,R., Smith,D.R., Holt,R.A., Smith,H.O., Weinstock,G. and Gibbs,R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     shotgun sequence only contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTE: Estimated insert size may differ from sequence length (see http://www.bgsc.bcm.tmc.edu/docs/Genbank draft data.html).

NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                            be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center project name: GTIT
Center clone name: CH230-31P19
Center clone name: CH230-31P19
Center clone name: Ch230-31P19
Center clone name: Phrap; version 0.990329
Assembly program: Phrap; version 0.990329
Consensus quality: 210550 bases at least Q40
Consensus quality: 211958 bases at least Q20
Consensus quality: 211381 bases at least Q20
Estimated insert size: 214666; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 218614)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 218614)
                                                                                                                                                                                                                                                                               215794
215894
217486
217586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Quality coverage: 7x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Web site: http://www.ngsc.bcm.
Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Center: Baylor
                                                                                                                                    organism="Rattus norvegicus"

/mol_type="genomic DNA"
/estimated_length=unknown
                                                                  clone="CH230-31P19"
                                                                                                                                                                                                                                                  location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---- Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -- Genome Center
                                                                                                                                                                                                                                                                        215793: contig of 215793 bp in length 215893: gap of unknown length 217485: contig of 1592 bp in length 217585: gap of unknown length 218614: contig of 1029 bp in length.
                                                                                                          xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         http://www.hgsc.bcm.tmc.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  College of Medicine
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 9
AC107438
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local
Haly Alberti, Y., Mayayi, M., Myouryi, M., Barnstead, M., Bendamed, F., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Bendamed, F., Birwalo, K., Blair, J., Blahkenburg, K., Blyth, P., Brown, M., Bryant, N., Buhay, C., Burch, P., Burrell, K., Calderon, B., Chen, C., Caveron, B., Chen, Y., Chen, Z., Chu, J., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Checko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Cheo, J., Denson, S., Deramo, C., Ding, Y., Dinh, H., Divya, K., Delgado, O., Denson, S., Deramo, C., Ding, Y., Dinh, H., Divya, K., Delgan, A., Escotto, M., Eugene, C., Evans, C.A., Falls, T., Fan, G., Fernandez, S., Finley, M., Flagg, N., Forbes, L., Foster, M., Gebrageorgis, B., Geer, K., Gill, R., Gardy, M., Guerra, W., Guerra, W., Gebrageorgis, B., Geer, K., Gill, R., Grady, M., Guerra, W., Guerra, M., Gebrageorgis, B., Geer, K., Gill, R., Grady, M., Guerra, W., Guerra, M., Gebrageorgis, B., Haland, W., Hamil, C., Hamilton, C., Hamilton, K., Harvey, Y., Havlak, P., Hawes, A., Henderson, N., Hernandez, J., Hernandez, R., Hines, S., Hladun, S.L., Hodgson, A., Hogues, M., Hanilton, C., Hamilton, C., Karpathy, S., Kelly, S., Khan, Z., King, L., Kovar, C., Kowis, C., Kraft, C.L., Lebow, H., Johnson, B., Johnson, R., Jolivet, A., Karpathy, S., Kelly, S., Khan, Z., King, L., Kovar, C., Liu, J., Liu, Y., London, P., Longacre, S., Lopez, J., Liu, J., Louiseged, H., Lozadok, R.J., Lu, X., Ma, J., Maheshwari, M., Mahindartne, M., Mahmoud, M., Malloy, K., Mandluy, K., Manluy, K., Manluy, K., Manluy, K., Manluy, K., Manluy, K., Manluy, K., Manluy, K., Manluy, K., Manluy, K., Manluy, K., Paster, J., Monten, B., Johnson, B., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson, R., Johnson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31158 AATTTAATTCCCAATGCAAAAGAATTGGCAAAATGGTCTGTGTTTTAATATTTTTACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            390 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             450 GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGG 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Rattus.
1 (bases 1 to 252137)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ENRICHED Rattus norvegicus (Norway rat)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Allen,C., Allen,H., Alsbrooks,S., Amin,A., Anguiano,D.
Anyalebechi,V., Aoyagi,A., Ayodeji,M., Baca,E., Baden,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Muzny, D. Marie., Metzker, M. Lee., Abramzon, S., Adams, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus clone CH230-160A14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC107438.5 GI:24818847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC107438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                217486. .217585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 50.2; DB 12
Pred. No. 0.00066;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     252137 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA linear HTG 09-NOV-2002
14, *** SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 218614;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ., Alder,J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (09-NOV-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Nov 9, 2002 this sequence version replaced gi:23267955.
On Nov 9, 2002 this sequence version replaced gi:23267955.
The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wang,Q., Wang,S., Warren,J., Warren,R., Wei,X., White,F., Williams,G., Willson,R., Wleczyk,R., Wooden,H., Worley,K., Wright,D., Wright,R., Yzakub,S., Yen,J., Yoon,L., Yoon,V., Zhau,F., Zhang,J., Zhou,J., Zhau,X., Zhao,S., Dunn,D., von Niederhausern,A., Weiss,R., Smith,D.R., Holt,R.A., Smith,H.O., Weinstock,G. and Gibbs,R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (21-JAN-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Valas,R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html)
NOTE: This is a "working draft' sequence. It currently
consists of 4 contigs. The true order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                          as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 252137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 252137)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center project name: GMZC
Center clone name: CH230-160A14
Center clone name: CH230-160A14
Center clone name: CH230-160A14
Center clone name: CH230-160A14
Assembly program: Phrap; version 0.990329
Consensus quality: 207940 bases at least Q40
Consensus quality: 210601 bases at least Q30
Consensus quality: 212576 bases at least Q20
Estimated insert size: 216052; sum-of-contigs estimation
Quality coverage: 6x in Q20 bases; sum-of-contigs estimat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genome Sequencing Consortium.
                                                                                                                                                                                                                                       238347
238447
                                                                                                                                                                                                                                                                                                          237177
237277
                                                                                                                                                                       240081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center: Baylor College of Medicine Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Web site: http://www.hgsc.bcm.
Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                              preserved
                                                                                                                     237176: contig of 237176 bp in length

7177 237276: gap of unknown length

7277 238346: contig of 1070 bp in length

3347 238446: gap of unknown length

7347 240080: contig of 1634 bp in length

7348 240180: gap of unknown length

7381 240180: gap of unknown length

7381 252137: contig of 11957 bp in length.

7382 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vera, V.,
                                                            organism="Rattus norvegicus"
mol_type="genomic DNA"
db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          http://www.hgsc.bcm.tmc.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Villasana, D., Waldron, L., Walker, B., Wang, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               estimation
```

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC069535/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                        Metzker, M.I., Lewis, J.R., Hume, J., Edwards, C., Harris, C.,

Dederich, D., Thomas, S., Okwuonu, G., Carlock, C., Garner, T.,

Addison, S., Pace, A., Williams, G., Bonnin, D., Brooke, A., Brown, J.,

Buhay, C., Bunac, C., Burkett, C., Chacko, J., Chen, G., Chen, Z.,

Cox, C., Davis, C., Delgado, O., Ding, Y., Dugan-Rocha, S.,

Fernandez, C., Ferraguto, D., Forcum-Tansey, J., Gill, R.,

Gorrell, J.H., Gunaratne, P., Haller, G., Hernandez, J., Hogues, M.,

Hosak, H., Hou, X., Huber, J., Jackson, L., Jia, Y., Kally, J., Kelly, S.,

Kovar, C., Liu, J., Liu, W., Loulsged, H., Lozado, R.J., Martin, R.,

Massey, E., McLeod, M.P., Mei, G., Moore, S., Morgan, M., Morris, S.,

Neal, D., Nelson, A., Nguyen, R., Nguyen, N., Oguh, M., Parish, B.,

Perez, L., Reiter, D., Say, J., Shen, H., Vasquez, L., Watlington, S.,

Williamson, A., Wrensford, G., Zhou, X., Bouck, J., Hodgson, A.,

Muzny, D.M., Rives, M., Scherer, S., Sodergren, E., Weinstock, G.,

Worley, K., and Gibbs, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62902 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAATACATGCTATGGTCTGAATGTGTGTA 6296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62962 AATTTAATTCCCAATGCAAAAGAATTGGCAAAATGGTCTGTGTTTTAATATTTTTACAGG 63020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             450 GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGG 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  76;
Submitted (02-JUN-2000) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Sep 12, 2001 this sequence version replaced gi:14787158.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus chromosome 7 clone RP23-453F14, WORKING DRAFT SEQUENCE, 5 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sciurognathi; Muroidea; Muridae; Murinae; Mus. 1 (bases 1 to 193795)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC069535
AC069535.15 GI:15559164
                                                                                                              Direct Submission
                                                                                                                                                                               Unpublished
                                                                                                                                                                                                              Direct Submission
                                                                                                                                    Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                            (bases 1 to 193795)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="wgs_end_extension
clone_end:T7"
6851.-.7301
/note="clone_boundary
clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                end_sequence:BH345291"
complement(235343...23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone_end:Sp6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              site: EcoRl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /estimated_length=unknown
240081. .240180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 estimated length=unknown 238347. .238446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 end_sequence:BH345304"
237177. .237276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  site:EcoRl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PHASE1; HTGS_DRAFT; HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="clone_boundary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .2159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 50.2; DI
Pred. No. 0.000
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               193795 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       235947)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 12;
.00069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 252137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HTG 12-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   Kelly,S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
FEATURES
                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                           gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                              Local
129400
                                                                                                                                                                                                         390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                         89;
                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank draft data.html).

NOTE: This is a 'working draft' sequence. It currently consists of 5 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                  GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGA
                                                                                                                                                                                 GAGAGAGAGAGAGAGAGAGAGATATATCTCTCTCTCTGTGATGAACCACTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
ATATCTATGAAATTTTATAGCTCTATATATAAAA 129367
                                                                                          GGGTTGGTGAACCGCAAAGTTCCTATATATCGAA 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chemistry: Dye-primer Bodipy: 62% of reads
Chemistry: Dye-terminator Big Dye: 38% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 192043 bases at least Q40
Consensus quality: 192786 bases at least Q30
Consensus quality: 193194 bases at least Q30
Estimated insert size: 192883; sum-of-contigs estimation
Quality coverage: 0x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         175815
186566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75944
76044
129148
129248
175715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
------Project Information
Center project name: MAPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing vector: M13; L0882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center clone name: RP23-453F14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center: Baylor College of Medicine
Center code: BCM
                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /escimated_length=unknown
129148. .129247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75944. .76043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location
                                                                                                                                                                                                                                                                                                                                                                                                         estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                           175715. .175814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               db_xref="taxon:10090"/chromosome="7"
                                                                                                                                                                                                                                                                                                                                                                                   estimated_length=unknown)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             estimated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone="RP23-453F14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Mus musculus"
                                                                                                                                                                                                                                                                                            8.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .193795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               129247: gap of unknown length
175714: contig of 46467 bp in length
175814: gap of unknown length
186565: contig of 10751 bp in length
186665: gap of unknown length
193795: contig of 7130 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75943: contig of 75943 bp in length 76043: gap of unknown length 129147: contig of 53104 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _type="genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _length=unknown
                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                            Score 50; DB 12;
Pred. No. 0.00074;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        L08821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA"
                                                                                                                                                                                                                                                                                                                   DB 12; Length 193795;
                                                                                                                                                                                                                                                                      65; Indels
                                                                                                                                                                                                                                                                         <u>.</u>
                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                       509
                                                                                                                                                                                                                              449
                                                                                                                                                                                 129461
                                                                                                                                                                                                                                                                         0
```

δ 밁 Ś 밁 S ORIGIN

밁

RESULT 11

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                        RESULT 12
CQ591632
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC012735/c
                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3836
                                                                                                                                                                                                                                                                                                                                                                                                                                3656 TGTATATTATATTCCCATTTTGTTCTCGTTTTGTGTGTG 3618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              391 AGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113;
                                                                                                                                           Drosophila sp.
Drosophila sp.
Drosophila sp.
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Eukaryota; Endopterygota; Diptera; Brachycera; Muscomorpha;
Neoptera; Endopterygota; Drosophila.
                                                                                                                                                                                                                                                                                                   Sequence
CQ591632
                                                   Venter,J.C., Adams,M., Li,P.W. and Myers,E.W. Detection kits, such as nucleic acid arrays, for detecting the expression of 10,000 or more Drosophila genes and uses thereof Patent: WO 0171042-A 19390 27-SEP-2001; PE Corporation (NY) (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 5235)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster, AC012735
                                                                                                                                                                                                                                                                                      CQ591632.1 GI:41649734
                                                                                                                                                                                                                                                                                                                                        CQ591632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   For further information on this sequence you fly@celera.com.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence was identified as CDM:10209919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rockville, MD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Adams, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster (fruit fly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTG; HTGS PHASE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC012735.1 GI:6223572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC012735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOTE: This is a 'working draft' sequence. This sequence will be replaced by the finished sequence as soon as it is the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGGGGTTGGTTAATTAATGTTAGGGGCGGGAAAGGACCAGGATCAGGATCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGAAAGAGAGAGAGAGAGAGAGATATTAATTTAGAAAATAAGTGTCACTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTG 609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTTCGGAAATCCCAAGGCTAGCCAACATTTATCGCTCGACTCGAAATCGTAAATATTTC 3657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                       5626 bp DNA
19390 from Patent WO0171042.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and Venter, J.C.
/organism="Drosophila
/mol_type="unassigned
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Drosophila melanogaster"
/mol_type="genomic DNA"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (03-NOV-1999) Celera Genomics, 45 West Gude Drive,
                                        .5626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 49.4; DB 12;
Pred. No. 0.00039;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ,
*23
*5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCING IN PROGRESS
       sp."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 5235;
                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      by the submitter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      may e-mail
                                                                                                                                                                                                                                                                                                                                           PAT 02-FEB-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTG 03-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
AC018487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Snoo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Sir
Matches 113;
                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                prosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Eukaryota; Metazoa; Arthropoda; Brachycera; Muscomorpha;
Ephydroidea; Drosophilade; Drosophila.

E 1 (bases 1 to 137544)

E 1 (bases 1 to 137544)

E 1 (bases 1 to 137544)

S Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,
Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
Doyle, C.M., Farfan, D.E., Galle, R., George, R. A., Harris, N.L.,
Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K.,
Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R.,
Moshrefi, M., Nixon, K., Packb, J.M., Park, S., Pfeiffer, B.,
Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D.,
Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 391 AGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137544 bp DNA linear HI Drosophila melanogaster strain y; cn bw sp chromosome BACRO9D22 (D1221) RPCI-98 09.D.22 map 13A-13B, *** SEQ PROGRESS ***, 51 unordered pieces.
AC018487
                                                                                      Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, I Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, I., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, I Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, N., Nixon, K., Paccleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
                                                                                                                                                                                                                                                                                                                 Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Clesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wark, S., Pfeiffer, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. Direct Submission
Submitted (13-DEC-1999) Drosophila Genome Center, Lawrence Berkeley Laboratory, MS 64-121, Berkeley, CA 94720, USA
3 (bases 1 to 137544)
Direct Submission
Direct Submission
Submitted (15-MAR-2002) Drosophila Genome Center,
Submitted (45-MAR-2002) Berkeley, CA 94720, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC018487.11 GI:19482327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTATATTATATTCCCATTTTCTCTCGTTTTGTGTGTG 1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cccaccarriarccerriarriccicrecrirecrire
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACATACCTCACTTCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGGGGGTTGGTTAATTAATGTTAGGGGCGGGAAAGGACCAGGATCAGGATCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGAAAGAGAGAGAGAGAGAGATATTAATTTAGAAAATAAGTGTCACTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTCGGAAATCCCAAGGCTAGCCAACATTTATCGCTCGACTCGAAATCGTAAATATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 137544)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:7242"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 49.4;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .0004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 5626;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                            Lawrence Berkeley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCING IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG 15-MAR-2002
ne X clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Blazej, R.G.,
                                                                                                                                                                                                                                                                                                  Blazej, R.G.
                                                                                                                                                                                                               Karra, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Karra, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       450
```

```
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        On Mar 15, 2002 this sequence version replaced gi:7144737.

For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a 'working draft' sequence. It currently consists of 51 contigs. The true order of the pieces is not known and their order in this sequence record is architers are represented as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         as soon as it
be preserved.
                                                                                                                                                                                                                  30859
32701
32781
                                                                                                                                                                                                                                                                     27790
30779
                                                                                                                                                                                                                                                                                                         8188

8749

9749

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828

10828
34884
34964
37552
37632
40359
40439
444477
444557
449892
560013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 909
989
1231
131
1391
1991
2071
2071
2071
2821
2821
3534
4462
4742
5820
5820
5820
5820
                                                                                                                                                                                                                                                                                          27789:
30778:
                                                                                                                                                                                                                                                                                                                                             25942:
26022:
                                                                                        44476:
44556:
                    56012:
                                                                                                                                                                                                                                                                                                                                                                                                                                       22221:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21096:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19789:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10747:
                                                                                                                                                                                                                                                                           30858:
                                                                                                                                                                                                                                                                                                                                                                                    24197:
                                                      49971:
                                                                                                                                                                                37551:
                                                                                                                                                                                                                    34883:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig of 919 bp in 1
gap of unknown length
contig of 1851 bp in
gap of unknown length
contig of 1207 bp in
gap of unknown length
gap of 1584 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of contig gap of contig gap of
                                                                                                                                                                                                                                                                                                                            gap of contig gap of contig gap of contig gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
gap of
                                                                     gap of contig gap of contig gap of contig gap of contig gap of contig gap of contig
                                                                                                                                                                                                                                                                                        gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig
gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        contig of 1048 bp in gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig of 1419 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ig of 680 bp in 1
of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ig of 1078 bp in length
of unknown length
ig of 789 bp in length
of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g of 908 bp in rea
                                                                                                                                                                                                                                                                                                                                           f unknown len
g of 1816 bp
f unknown len
g of 1745 bp
f unknown len
                                                                                                                                                                                                                                                                                                                                                                                                                                   f unknown length
g of 1307 bp in
f unknown length
g of 1045 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         f unknown leng of 1896 bp f unknown leng of 2024 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 670 bp in le
                                                                   unknown
of 4038
unknown
of 5335
                                                                                                                                                                                                                  unknown
of 2103
                                                                                                                                                                                                                                                    unknown
of 2989
unknown
of 1842
unknown
of 6041
unknown
of 6313
                                                                                                                                                                               unknown
of 2588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown length
of 1207 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 1481 bp in unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 242 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 713 bp in
                                                                                                                                                                                                                                                                                                                              of 1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of 1851 bp in length
                                                                                                                                             of 2727
                                                                                                                                                                unknown
                                   length
bp in l
length
bp in l
                                                                                                                                                                                                                                                                                                                                                                                bp in length
                                                                                                                                                                                                                  length
bp in
                                                                                                                                                                                                                                                                         bp in l
length
                                                                                                         ď
                                                                                                                                             ģ
                                                                                                                                                                                ď
                                                                                                                                                                                                                                                        ģ
                                                                                                                                                                                                                                                                                                                                đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1ength
                                                                                                                            length
                                                                                                                                                              length
                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                   length
                                                                                                                                               length
                                                                                                                                                                                length
                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                         length
 length
```

```
FEATURES
                                           gap
                                                                                                                                                                                                                                              gap
                                                                                                                                                                                                                                                                                                                                                                                          gap
                                                                                            gap
                                                                                                                                            gap
                                                                                                                                                                                          gap
                                                                                                                                                                                                                                                                                            gap
                                                                                                                                                                                                                                                                                                                                            gap
                                                                                                                                                                                                                                                                                                                                                                                                                                              gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133000
133618
133618
133698
134304
134304
135110
135190
135687
135767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131473
131553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          130867
131154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              130168
130248
130787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62406
62486
68581
68581
77301
77381
77381
87165
87245
87245
95880
95960
104339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        129656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               129576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                128900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       114794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 114714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                128398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="BACR09D22 (D1221) RPCI-98 09.D.22"
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
Drospphila melanogaster BAC library, partial EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рвасез
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /mol_type="genomic DNA"
/strain="y; cn bw sp"
/db_xref="taxon:7227"
/chromosome="X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                 'estimated_length=unknown
|991. .2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Drosophila"
  estimated
749. .9828
                                                                       estimated
                                                                                                                        estimated
                                                                                                                                                                        estimated
                                                                                                                                                                                                                       estimated
                                                                                                                                                                                                                                                                       estimated
                                                                                                                                                                                                                                                                                                                     estimated
                                                                                                                                                                                                                                                                                                                                                                                                                    estimated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      map="13A-13B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135686:
135766:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         136699:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 135189:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130167:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        129575:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128899:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .3677
                                                                                                                                                                                                                                           ...ared_length=unknown
                                                                                                                                                                                             . 4741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of unknown length
contig of 726 bp in length
gap of unknown length
contig of 497 bp in length
contig of 497 bp in length
contig of unknown length
contig of 933 bp in length
gap of unknown length
gap of unknown length
contig of 765 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                    _length=unknown
                       _length=unknown
                                                                                                                                                                      _length=unknown
                                                                                                                                                                                                                    _length=unknown
                                                                                                                                                                                                                                                                                                                   length=unknown
                                                                       _length=unknown
                                                                                                                     length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of unknown length
ig of 9784 bp in length
of unknown length
leg of 8635 bp in length
of unknown length
of unknown length
of sa79 bp in length
of unknown length
of unknown length
leg of 10295 bp in length
of unknown length
of unknown length
of 13604 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 f unknown length
g of 539 bp in length
f unknown length
g of 287 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g of 679 bp in length f unknown length g of 688 bp in length f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          f unknown length
g of 239 bp in le
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
of 8640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown length
of 596 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 538 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 422 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 6095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
op in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Π
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in
                                                                                                                                                                                                                                                                                                                                            JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
AC018488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pocas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 113;
                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              391
                                                                                                                                                                                                                                                                                                                                                                        Kogers, Y., An, H., Baldwin, D., Banzon, J., Beeson, K.Y., Busam, D.A., Carlson, J.W., Center, A., Champe, M., Davenport, L.B., Dietz, S.M., Dodson, K., Dorsett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D., Ferriera, S., Frise, E., Galle, R.F., Garg, N.S., George, R.A., Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Ibegwam, C., Jalali, M., Kruse, D., Li, P., Mattei, B., Moshrefi, A., McIntosh, T.C., Moy, M., Murphy, B., Nelson, C., Nelson, K.A., Nunco, J., Pacleb, J., Paragas, V., Park, S., Patel, S., Pfeiffer, B., Phouanenavong, S., Pittman, G.S., Pari, V., Richards, S., Scheeler, F., Stapleton, M., Strong, R., Svirskas, R., Tector, C., Williams, S.M., Zaveri, J.S., Smith, H.O., Rubin, G.M. and Venter, J.C. Sequencing of Drosophila chromosome X, region 13A-13B Unpublished
                                                                                                                   Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Meopteara; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilia.

1 (Dases 1 to 165118)

1 (Celniker, S. E., Adams, M. D., Kronmiller, B., Tyler, D., Wan, K. H., Celniker, S. E., Adams, M. D., Kronmiller, B., Tyler, D., Wan, K. H.,
Sequence submitted by:
Berkeley Drosophila Genome Project
                                              Laboratory, MS 64-121, Berkeley, CA 94720, USA
On Mar 14, 2001 this sequence version replaced gi:6751649.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cellison, J. W. Center a Chamna M D. Rogers, J. An, H. Baldwin, D. Banzon, J. Beeson, K.Y. Busam, D. Callson, J. W. Center a Callson, J. W. Center a Chamna M D. Banzon, J. Beeson, K.Y. Busam, D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Center a Chamna M D. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Callson, J. W. Cal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC018488
Drosophila melanogaster, chrc
BACR09703, complete sequence.
                                                                          Submitted (13-DEC-1999) Drosophila Genome Center, Laboratory, MS 64-121, Berkeley, CA 94720, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC018488.7
HTG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC018488
                                                                                                                                                                                                                                                                                                                                                                   Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTATATATATTCCCATTTTGTTCTCGTTTTGTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cccaccarriarccerriarriccrcrecrrrecrrie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTTCGGAAATCCCAAGGCTAGCCAACATTTATCGCTCGACTCGAAATCGTAAATATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGGGGGTTGGTTAATTAATGTTAGGGGCGGGAAAGGACCAGGATCAGGATCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGTCAATGGCATGCGTGACGAATGTACATATTGGGTGTAGGGTCCAATATTTTGCGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAGAAAGAGAGAGAGAGAGAGAGATATTAATTTAGAAAATAAGTGTCACTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTG 450
                                                                                                                                                                                                                                                                                                                                               (bases 1 to 165118)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /estimated_length=unknown 13966. .14045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /estimated_length=unknown
12679. .12758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              estimated_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             estimated_length=unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:13324744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        51.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 49.4;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             165118 bp 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .0011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             X,X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 12;
```

region

linear INV on 13A-13B, F

MAR-2001 BAC clone

Brandon, R.C.,

Lawrence

Berkeley

Blazej, R.G.,

609 35507

570

510 35408

35348

Indels Length

0,

Gaps

0

137544;

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
AC022345
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 113;
                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                    Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Eukaryota; Metazoa; Arthropoda; Brachycera; Muscomorpha; Neoptera; Endopterygota; Diptera; Erachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

CE 1 (bases 1 to 182416)

CE 1 (bases 1 to 182416)

RS Celniker, S.E., Adams, M.D., Kronmiller, B., Tyler, D., Wan, K.H., C., Holt, R.A., Evans, C.A., Gocayne, J.D., Amanatides, P.G., Brandon, R.C., Rogers, Y., An, H., Baldwin, D., Banzon, J., Beeson, K.Y., Busam, D.A., Carlson, J.W., Center, A., Champe, M., Davenport, L.B., Dietz, S.M., Dodson, K. Dorsett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D., Dodson, K., Dorsett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D., Dodson, K., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Gonzalez, M., Jalali, M., Kruse, D., Li, P., Mattei, B., Moshrefi, A., Pacleb, J., Paragas, V., Park, S., Pari, V., Richards, S., Scheeler, F., Phouanenavong, S., Pittman, G.S., Puri, V., Richards, S., Scheeler, F., Stapleton, M., Strong, R., Svirskas, R., Tector, C., Williams, S.M., Saveri, J.S., Smith, H.O., Rubin, G.M. and Venter, J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lawrence Berkeley National Laboratory, MS 64-121
Berkeley, CA 94720
Berkeley, CA 94720
This sequence was assembled using end sequences from a whole genome shotgun and from subclones of this BAC and its neighboring clones. For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       prosophila melanogaster, chromosome BACR10J19, complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC022345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC022345.2 GI:13374632
                         Sequencing of Drosophila chromosome X, region 12F-13A Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agagagagagagagagagagagagagagttttctctctatattctggttcaccggttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ĠTĠGGGGTTĠGGŤĠGTŤAĀTTĀĀŤĠŤTAGGGGCĠĠĠĠĀĀĀĠĠĀĊĊĀĠGĀŤCAGĠATCTGĠ 8899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGAAAGAGAGAGAGAGAGAGAGATATTAATTTAGAAAATAAGTGTCACTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTATATATATTCCCATTTTGTTCTCGTTTTGTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cccaccarratcccrrrratrrccrcrcrrrrcrrre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTCGGAAATCCCAAGGCTAGCCAACATTTATCGCTCGACTCGAAATCGTAAATATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              деттестваассесараасттестатататсевасстесассассатасстсасттевате 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="BACR09F03 (D1222)"
/clone lib="RPCI-98 (Roswell Park Cancer Institute Drosophila melanogaster BAC library, partial EcoRI pBACe3.6)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="genomic DNA"
/strain="y; cn bw sp"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chromosome="X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .165118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 49.4; DB 13;
Pred. No. 0.0011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182416 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  e DNA
X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  region 12F-13A, BAC clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 165118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INV 17-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

Ś 밁 ş

Ś 밁

뫄 Ş 밁

```
COMMENT
Search co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                          Ş
                                                                                                                                                片
                                                                                                                                                                                  Ś
                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                              Matches 113;
                                                                                                                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                      157654
                                                                                                                                                                                                                                                                                                                                                                                                    Local
                  completed: November
                                                                                                                                                                                                                            157714
                                                                        157834 TGTATATTATATTCCCATTTTGTTCTCGTTTTGTGTGTG
                                                                                                                                                      157774
                                                                                                                                                                                                                                                                                                                                            391
                                                                                                                                                                                                                                                                  451
                                                                                                                                                                                          511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G. Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Boyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Karray, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Roarney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Roshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     shotgun and from subclones of this BAC and its neighboring clones. For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (01-FEB-2000) Drosophila Genome Center, Lawrence Laboratory, MS 64-121, Berkeley, CA 94720, USA On Mar 17, 2001 this sequence version replaced gi:6850282.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence submitted by:
Berkeley Drosophila Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lawrence Berkeley National Laboratory, MS
                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                            GTGGGGGTTGGGTTAATTAATGTTAGGGGCGGGAAAGGACCAGGATCAGGATCTGG
                                                                                                                                                                                                                                                              AGAGAAAGAGAGAGAGAGAGAGATATTAATTTAGAAAATAAGTGTCACTTTTTG
                                                                                                                                                                                                                                                                                                                                      GGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATC
                                                                                                              CCCACCATTATCCGTTTTATTTCCTCTGCTTTCCTTTG
                                                                                                                                                  7.9%;
milarity 51.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Drosophila me
/mol_type="genomic DNA"
/strain="y, cn bw sp"
/db xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="BACR10J19 (D1234)"
/clone lib="RPCI-98 (Roswell Park Cancer Institute Drosophila melanogaster BAC library, partial EcoRI pBACe3.6)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /chromosome="X"
                      ۲
                        2006, 11:25:43
                                                                                                                                                                                                                                                                                                                                                                                    <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                      Score 49.4; DB 1
Pred. No. 0.0011;
                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                            DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64-121
                                                                                                                          609
                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                            Length 182416;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Blazej,R.G.,
                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in
                                                                                                                                                                                                                                                                                                                                                            450
                                                                                                                                                                                                                                                                                  510
                                                                                                                                                                                                        570
                                                                                                                                                                                                                                            157773
                                                                                                                                                                                                                                                                                                                      157713
                                                                                                                                                                                                                                                                                                                                                                                              0
```

Copyright

GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.

2

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                  Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence:
                                                                                                                                                                                                                                                                                                                                                                seq length: 0
seq length: 2000000000
                                                                                                                                                                                                        N_Geneseq_8:*
1: geneseqn1980s:*
2: geneseqn1990s:*
3: geneseqn2000s:*
                                                                     10:
11:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-702-319A-113_COPY_1019_1643
625
                                                                                                                                                                                                                                                                                                                                                                                                                                                    5244920 seqs, 3486124231 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                October 31,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctgagccatttaattcgaga.....tttgctcgagtctcgcggaa 625
geneseqn2003cs:*
geneseqn2003ds:*
geneseqn2004as:*
geneseqn2004bs:*
geneseqn2005s:*
                                                                                                      geneseqn2003as:*
geneseqn2003bs:*
                                                                                                                                        geneseqn2002as:*
geneseqn2002bs:*
                                                                                                                                                                          geneseqn2001bs:*
                                                                                                                                                                                           geneseqn2001as:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2006, 23:17:03; Search time 264.41 Seconds (without alignments)
16480.672 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                      10489840
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	% Query Match Length	DB	ID	Description
1	625	100.0	3070	6	ABK17109	Abk17109 Eucalyptu
N	625	100.0	3070	10	ADH75529	Adh75529 Eucalyptu
ω	625	100.0	3070	14	ADW80563	Adw80563 E. grandi
4	606.2	97.0	661	w	AAC62762	Aac62762 O-methyl
S	606.2	97.0	661	δ	ABK17027	Abk17027 Eucalyptu
6	606.2	97.0	661	10	ADH75428	Adh75428 Eucalyptu
7	606.2	97.0	661	14	ADW80462	Adw80462 E. grandi
8	606.2	97.0	2096	ω	AAC62810	Aac62810 O-methyl
9	606.2	97.0	2096	σ	ABK17075	Abk17075 Eucalyptu
10	606.2	97.0	2096	10	ADH75476	Adh75476 Eucalyptu
11	606.2	97.0	2096	14	ADW80510	Adw80510 E. grandi
12	534	85.4	534	13	ADQ88319	Adq88319 Eucalyptu
13	485	77.6	485	13	ADQ88320	Adq88320 Eucalyptu
14	306	49.0	306	13	ADQ88321	Adq88321 Eucalyptu
15	293	46.9	293	13	ADQ88322	Adq88322 Eucalyptu
16	119	19.0	119	13	ADQ88323	Adq88323 Eucalyptu
17	98	15.7	98	13	ADQ88324	Adq88324 Eucalyptu
18	66	10.6	66	13	ADQ88325	Adq88325 Eucalyptu

The invention relates to isolated promoter sequences from Pinus radiata and Eucalyptus grandis, comprising a sequence chosen from leaf-, root-, flower-, pollen-, bud-, meristem-specific promoters or temporally

Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.

Claim 1; Page 103-104; 121pp; English.

WPI; 2002-114583/15. Perera R, Rice S,

Eagleton C,

Lasham A;

o	o	o	a				a	1.3	4.3	1.1				1.3		a 							o 			
5	4	ū	12	Ξ	40	9	38	37	36	35	4	ω ω	ວັ	ũ	õ	9	8	?7	26	25	4	23	2	ï	20	9
41.4	41.4	41.4	41.4	41.4	41.4	41.6	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	42	42.4	42.6	43	43	43	43.4	43.4	43.4	4 5	49.4
6.6	6.6	6 6	6.6	6.6	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.8	6.8	6.9			6.9		6.9	7.2	7.9
24080	24080	24080	24080	407	407	53981	132942	126192	421	421	421	421	421	421	385	61009	110000	2000	1630	1630	378	2199	2000	2000	1951	5626
12	10	10	9	10	w	11	14	11	14	10	w	w	N	N	σ	14	11	œ	10	w	σ	5	10	5	14	4.
ADM74408	ADC85293	ADB72551	ADA02813	ADD41763	AAA68013	ACN44928	ADZ12611	ACN44820	AED59781	ADD41681	AAA67931	AAA69595	AAZ06845	AAV23844	ABQ92741	ADZ12537	ACN43984_3	ADA71732	ADD41764	AAA68014	ABQ92788	ADC08351	ADC08416	ADC08406	ADZ44892	ABL14766
Adm74408 Murine ca	Adc85293 Mouse Egr	Adb72551 Mouse Egr	Ada02813 Mouse Egr	Add41763 O-methyl	Aaa68013 Eucalyptu	Acn44928 Mouse gen	Adz12611 Murine ca	Acn44820 Mouse gen	Aed59781 Eucalyptu	Add41681 O-methyl	Aaa67931 Eucalyptu	Aaa69595 Eucalyptu	Aaz06845 Eucalyptu	Aav23844 Plant OMT	Abq92741 Triticum	Adz12537 Murine ca	Continuation (4 of	Ada71732 Rice gene	Add41764 O-methyl	Aaa68014 Eucalyptu	Abq92788 Triticum	Adc08351 Rice DNA	Adc08416 Rice DNA	Adc08406 Rice DNA	Adz44892 Tissue-sp	Abl14766 Drosophil

ALIGNMENTS

```
RESULT 1
ABK17109
Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; ss; PCR primer.
                                                                                                                                                                                                                                                                                                              ABK17109 standard; cDNA; 3070 BP
                                                                                                                                    20-JUN-2000; 2000US-00598401.
28-NOV-2000; 2000US-00724624.
                                                                                                                                                                                                                                                            Eucalyptus grandis promoter polynucleotide #51.
                                                                                                                                                                                                                                                                              26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                              ABK17109;
                                                                                                             (GENE-) GENESIS RES & DEV CORP LTD.
                                                                                                                                                            20-JUN-2001; 2001WO-NZ000115
                                                                                                                                                                             27-DEC-2001.
                                                                                                                                                                                             WO200198485-A1.
                                                                                                                                                                                                             Eucalyptus grandis.
```

```
RESULT 2
ADH75529
ID ADH7
XX
AC ADH7
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                            Ş
                                                                                                                                                                                밁
                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 625;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 regulated promoters such as xylogenesis-specific promoters. The promoter polypeptides and their related polynucleotides are useful in the production of genetic constructs, used for modifying gene expression in a target organism, in particular a plant. The method is useful for modifying expression of a polynucleotide that comprises an intron sequence, through removal of the intron sequence. The method is useful for modifying growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional cloning of genes, in various assays to determine biological activity, to raise antibodies, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABKI7016-ABKI7125 regresent pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                 ADH75529;
                                             ADH75529 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eucalyptus grandis polynucleotides and PCR primers used in the invention
                                                                                                                                                                                                                                                                                                      1439
                                                                                                                                                                                                                                                                                                                                                                  1379
                                                                                                                                                                                                                                                                                                                                                                                                                              1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1079
                                                                                                                       1619
                                                                                                                                                                                  1559
                                                                                                                                                                                                                                              1499
                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGAGACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3070 BP; 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTATGATCTTGGAGTTGTTGGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                             TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                     AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                  TTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                   GAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                GAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                                                                            ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                        TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                  AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                               DNA; 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; 718 C; 755 G; 768 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                               쁑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 625; DB v,
No. 2.8e-189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                       1643
                                                                                                                                                     625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1078
                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                     1618
                                                                                                                                                                                                                                               1558
                                                                                                                                                                                                                                                                                                                                                                      1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

```
밁
                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                      S
              S
                                        밁
                                                               Ś
                                                                                       밁
                                                                                                              Ś
                                                                                                                                          밁
                                                                                                                                                               5
                                                                                                                                                                                        В
                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                  Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement, reverse complement, reverse sequence or inverted repeat or a sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to a new isolated polynucleotide comprising pinus radiata (Monterey pine) superubiquitin promoter sequence, it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New polynucleotide of the superubiquitin promoter useful in modifying gene expression in a target or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2003-903678/82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-APR-2002; 2002US-00137036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO2003093475-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eucalyptus grandis superubiquitin related sequence #49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-APR-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Monterey pine; nsgenic plant.
                                                                                                                                                                                                                                                                                                                                                  1019
                                          1379
                                                                                         1319
                                                                                                                                           1259
                                                                                                                                                                                            1199
                                                                                                                                                                                                                                              1139
                                                                                                                                                                                                                                                                                               1079
                                                                361
                                                                                                                  301
                                                                                                                                                                   241
                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                       121
                 421
                                                                                                                                                                                                                                                                                                                                                                                                  al Similarity
625; Conserv
                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENESIS RES & DEV CORP LTD.
RUBICON FORESTS HOLDINGS LTD
                                                                                                                                                                                                                                                                                                                                                              CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   3070 BP; 829 A;
                                                                                                                                                           ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                            GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTT
                                                                                                                                                                                                                                                                                                               CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGACGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                              AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                           ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                             AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                              GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                               CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wood
                                          AACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; ilarity 100.0%; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Σ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         superubiquitin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    718
                                          123pp; English
                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ç
                                                                                                                                                                                                                                                                                                                                                                                                              Score 625; DB 10;
Pred. No. 2.8e-189;
                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Visser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         promoter; gene expression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perera
                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from Pinus radiata,
                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                           1438
                                                                     420
                                                                                              1378
                                                                                                                                              1318
                                                                                                                                                                                                1258
                                                                                                                                                                                                                                                 1198
                                                                                                                                                                                                                                                                                                                                                    1078
                                                                                                                      360
                                                                                                                                                                       300
                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                þ
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                        09-NOV-2001;
30-APR-2002;
08-NOV-2002;
                                                                                                                                                                                                                                                                                                          25-MAR-1999;
30-JUL-1999;
24-FEB-2000;
20-JUN-2000;
28-NOV-2000;
           The invention relates to a novel isolated polynucleotide sequence comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (cOMP) promoter (ADM80462 or ADM80563) Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADM80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for
                                                                                                                               New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                 06-NOV-2003;
                                                                                                                                                                                                                                                                                                                                                                                                          03-FEB-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5'UIR
  producing
                                                                                                                                                                                WPI; 2005-131806/14.
                                                                                                                                                                                                                             (RUBI-)
                                                                                                                                                                                                                                        (GENE-)
                                                                                                                                                                                                                                                               08-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                US2005026162-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ss; wood; plant; transcription;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADW80563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADW80563 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     grandis caffeic acid O-methyltransferase cDNA SEQ ID NO:113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                          2; SEQ ID NO 113; 82pp; English.
                                                                                                                                                                                                     ₩,
                                                                                                                                                                                                                             GENESIS
RUBICON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTCCTTTGCTCGAGTCTCGCGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTGGTGTAGGGTCCAATATTTTGCGGGAAGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
  a plant
                                                                                                                                                                                                      Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plant.
                                                                                                                                                                                                                                                              2001US-0345397P.
2002US-00137036.
2002US-00291447.
2002US-0425087P.
                                                                                                                                                                                                                                                                                                            2000WO-NZ000018.
2000US-00598401.
2000US-00724624.
                                                                                                                                                                                                                                                                                                                                                                                 2003US-00702319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= a
/*tag= a
1019. .1676
'****q= b
                                                                                                                                                                                                                                                                                                                                                99US-00276599
99US-0146591P
                                                                                                                                                                                                     ភូ
                                                                                                                                                                                                                             RES & DEV CORP LTD
FORESTS HOLDINGS LT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
with modified gene expression, and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                   Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3070
                                                                                                                                                                                                      Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              caffeic
                                                                                                                                                                                                                             LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O-methyltransferase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
```

```
8
                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          និន្តនិន្តនិង
문
                      S
                                                      뮍
                                                                                                                                         5
                                                                                                                                                                         밁
                                                                                                                                                                                                 S
                                                                                                                                                                                                                                 멂
                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                            뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 625;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 identifying a gene responsible for a desired function or phenotype. composition and methods are useful for modifying gene expression or modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                           1319
                                                                                                                                                                                                                                                                                                                                                                                                              1199
1619
                                                        1559
                                                                                                                1499
                                                                                                                                                                           1439
                                                                                                                                                                                                                                   1379
                                                                                                                                                                                                                                                                                                                                                    1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1019
                                                                                   541
                                                                                                                                              481
                         601
                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                TTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                          GAACCTCCACCACCATACCTCACTTCAATCCCCCACCATTTATCCGTTTTATTTCCTCTGC 600
                                                                                                                                   ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                        GAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGC
                                                                                                                 ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                         TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                        TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                   AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                             AACTCCGTATTTCTCTCACTTCCATAAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                    ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                        ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAATTTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
TTTCCTTTGCTCGAGTCTCGCGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 625;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 e 625; pr _
No. 2.8e-189;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                         1618
                                                                                                                 1558
                                                                                                                                              540
                                                                                                                                                                            1498
                                                                                                                                                                                                       480
                                                                                                                                                                                                                                    1438
                                                                                                                                                                                                                                                                                              1378
                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                    1318
                                                                                                                                                                                                                                                                                                                                                                                                               1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1078
                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
```

AAC62762 standard; DNA:

AAC62762

02-FEB-2001 (first entry)

O-methyl transferase promoter coding sequence

Promoter; eucalyptus; pine; gene transcription;

RESULT 4
AAC62762
ID AAC6
XX AAC6
XX AAC6
XX AAC6
XX O2-F
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX P Eucalyptus

WO200058474-A1

```
Matches 622;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel promoter sequences useful for modulating transcription of plant DNA sequences of interest and production of polypeptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-MAR-1999;
30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequences may also be used to tag or identify an organism or its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 48; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-FEB-2000; 2000WO-NZ000018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GENE-) GENESIS RES & DEV CORP LTD. (FLET-) FLETCHER CHALLENGE FORESTS
597
                                                                                                                        481
                                                                                                                                                                 477
                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                  417
                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                          AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                   AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                               ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                              AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                        ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                           AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-00276599.
99US-0146591P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97.0%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eagleton CK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 606.2;
Pred. No. 1.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F. F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .4e-183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
                                                                              596
                                                                                                                                                                 . 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                       416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
```

á

밁

Ś 밁

CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA

120 60 60

CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA

61 61 S

밁

S 밁 Ś 밁 S 맑 Ś 밁 Ś 밁 Š В Ś 밁 S

밁

```
밁
片
                             Ś
                                                                  Matches
                                                                                               Query Match
                                                                                                                                                                          production of genetic constructs, used for modifying gene expression in a target organism, in particular a plant. The method is useful for modifying expression of a polynucleotide that comprises an intron sequence, through removal of the intron sequence. The method is useful for modifying growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional cloning of genes, in various assays to determine biological activity, to raise antibodies, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABK17016-ABK17125 represent Pinus radiata and Eucalyptus grandis polynucleotides and PCR primers used in the method
                                                                                                                                                                                                                                                                                                                                                                           The invention relates to isolated promoter sequences from Pinus radiata and Eucalyptus grandis, comprising a sequence chosen from leaf., root., flower., pollen., bud., meristem-specific promoters or temporally regulated promoters such as xylogenesis-specific promoters. The promote polypeptides and their related polynuclectides are useful in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; Page 63-64; 121pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-JUN-2000; 2000US-00598401.
28-NOV-2000; 2000US-00724624.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-JUN-2001; 2001WO-NZ000115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; ss;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eucalyptus grandis promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABK17027;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABK17027
                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601 CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 629
                                                                  622;
                                  ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENESIS RES & DEV CORP LTD. FLETCHER CHALLENGE FORESTS
                  CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard; cDNA;
                                                                                                                                 661 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rice S,
                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first
                                                                                                                                   192
                                                                              97.0%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eagleton C,
                                                                                                                                 A; 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polynuclectide
                                                                  0
                                                                                                                                 C; 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΒP
                                                                                Score 606.2; DB 6;
Pred. No. 1.4e-183;
                                                                  Mismatches
                                                                                                                                 G; 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IND LTD.
                                                                                                                                   T; 0 U;
                                                                                                                                   0 Other;
                                                                                                 Length
                                                                  Indels
                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                 promoter
                                                                  Gaps
```

```
RESULT 6
ADH75428
ID ADH7
XX ADH7
XX ADH7
XX ADH7
XX ADH7
XX ADH7
XX Euca
XX Cap Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX I 13-1
XX I 30-1
XX I GEB
PA (RUI
XX I GEB
PA (RUI
XX I RICE
XX I RICE
XX WPI I Use:
XX Dise

                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                         ds; Monterey pine;
transgenic plant.
          Disclosure; SEQ ID NO 12; 123pp; English
                               New polynucleotide of the useful in modifying gene e
                                                                 WPI; 2003-903678/82
                                                                                                                                            30-APR-2002; 2002US-00137036.
                                                                                                                                                                 30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                         13-NOV-2003
                                                                                                                                                                                                              WO2003093475-A1.
                                                                                                                                                                                                                                   Eucalyptus grandis
                                                                                                                                                                                                                                                                                          Eucalyptus grandis superubiquitin related sequence
                                                                                                                                                                                                                                                                                                                  22-APR-2004
                                                                                                                                                                                                                                                                                                                                        ADH75428;
                                                                                                                                                                                                                                                                                                                                                            ADH75428 standard; DNA;
                                                                                       SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                        597
                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                           RUBICON FORESTS HOLDING
                                                                                                                                                                                                                                                                                                                                                                                                                     CIGCITICCITIGCICGAGICICGCGGAA 629
                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATCGAACCTCCACCACCATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTATGATCTTGGAGTTGTTGGTGCAAATTTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATCGAACCTCCACCACCATACCTCAACTTCAATCCCCACCATTTATCCGTTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGTTTTCTCTATATTTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCTTTCCTTAACAAG
                                                                                    Wood M,
                                                                                                                                                                                                                                                                                                                  (first
                                                                                    Eagleton
                                                                                                                                                                                                                                                                    superubiquitin;
                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                            HOLDINGS
                               expression in a
                                                                                       ÇK,
                                                                                                                                                                                                                                                                                                                                                              ₽P
                                                                                                                      LTD
                                                                                      Visser
                                                                                                            LTD.
                                                                                                                                                                                                                                                                    promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                          625
                                                                                       ES,
                               promoter from target organis
                                                                                                                                                                                                                                                                    gene
                                                                                       Perera
                                 organism
                                                                                                                                                                                                                                                                     expression;
                                                                                                                                                                                                                                                                                          #6
                                                                                       æ
                                           Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
```

```
δ
                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ន្តន្តន្តន្តន្ត្
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 622; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to a new isolated polynucleotide comprising the Pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or a sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                           transgenic
                                        ss; wood; plant;
                                                                                                21-APR-2005
                                                                                                                                                    ADW80462 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 661 BP; 192 A; 145 C; 150 G; 174
                                                                    grandis caffeic acid O-methyltransferase promoter SEQ
                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                    597
                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                          537
                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                477
                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                      417
                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                                                                                                          CTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGCGCCAACCCTAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAATTTTCTCTTTTAGGTAAGTAAGCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                          CTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                 TATCGAACCTCCACCACCACCATCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                       ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                       ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                             AGAGITTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                           plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                              (first
                                        transcription;
                                                                                                                                                    CDNA;
                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97.0%;
98.9%;
                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 606.2; DB 10;
Pred. No. 1.4e-183;
"Mismatches 3;
                                                                                                                                                    ВP
                                          caffeic acid O-methyltransferase;
                                                                                                                                                                                                                                                    625
                                                                                                                                                                                                                          629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T; 0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                     ID NO:12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                             596
                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                         476
                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
```

Eucalyptus grandis

Key TATA_signal

Location/Qualifiers 537. .543

```
맑
                         S
                                                                                   Ś
                                                                                                                                      S
                                                                                                                                                                         밁
                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                               밁
                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-FEB-2000;
20-JUN-2000;
28-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to a novel isolated polynucleotide sequence comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (cOMT) promoter (ADW80462 or ADW80563). Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADW80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-MAR-1999;
30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-APR-2002;
08-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-NOV-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          06-NOV-2003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US2005026162-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (RUBI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GENE-)
                                                         181
                           241
                                                                                    181
                                                                                                                                              121
                                                                                                                 121
                                                                                                                                                                          61
                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                          622;
                                                                                                                                                                                                                                  ۳
                                                                                                                                                                                                                                                                                                                                                                             exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENESIS RES & DEV CORP LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RUBICON
                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                GTATGATCTTGGAGTTGTTGGTGCAAATTTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                           CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAAGGCTGATTA
                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGAGCACGACCCTACCCTTAACAAG
                                                                                                                                                                                                                                  CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCCCAGGGAAATT
                                                                                                                                                                          CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                         AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000WO-NZ000018.
2000US-00598401.
2000US-00724624.
2000US-0345397P.
2001US-0345397P.
2002US-00137036.
2002US-00291447.
2002US-0029147.
                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                  B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ID NO 12; 82pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2003US-00702319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FORESTS HOLDINGS
                                                                                                                                                                                                                                                                                                                                                 192 A; 145 C; 150 G; 174 T; 0
                                                                                                                                                                                                                                                                                                      97.0%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eagleton CK;
                                                                                                                                                                                                                                                                                         o
;:
                                                                                                                                                                                                                                                                                                        Score 606.2;
Pred. No. 1.4
                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LTD.
                                                                                                                                                                                                                                                                                                        4e-183;
                                                                                                                                                                                                                                                                                                                     DB 14;
                                                                                                                                                                                                                                                                                         ₩
••
                                                                                                                                                                                                                                                                                                                                                  U; 0 Other;
                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                     Length 661;
                                                                                                                                                                                                                                                                                         4.
                                                                                                                                                                                                                                                                                         Gaps
                           300
                                                                                    240
                                                                                                                                              180
                                                                                                                                                                          120
                                                                                                                                                                                                                                  60
                                                       240
                                                                                                                 180
```

```
RRSULT 8
AAC62810
ID AAC66
XX AAC6
XX AAC6
XX AAC6
XX Prom
XX Prom
XX Prom
XX Prom
XX Prom
XX AAC6
PN W020
PF 24-F
XX 25-M
PR 30-J
XX Y
PR 30-J
XX WPI;
DR Pere
XX WPI;
DR P-PS
XX WPI;
DR P-PS
XX WOve
PT Sequ
XX Clai
XX Nove
PT Sequ
XX Clai
XX The
CC For
CC sequ
SQ Sequ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                   The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The sequences may also be used to tag or identify an organism or its
                                                                                                                   Novel promoter sequences useful for modulating transcription sequences of interest and production of polypeptides.
                                                                                                                                                                                                                                                   25-MAR-1999;
30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                          Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                 Promoter; eucalyptus; pine; gene transcription;
                                                                                                                                                                                                                                                                                                                                                                                                         O-methyl transferase promoter coding sequence #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                 02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAC62810;
 Sequence
                       reproductive m
                                                                                              Claim 1;
                                                                                                                                                        P-PSDB;
                                                                                                                                                                                          Perera
                                                                                                                                                                                                                 (GENE-)
                                                                                                                                                                                                                                                                                      24-FEB-2000; 2000WO-NZ000018.
                                                                                                                                                                                                                                                                                                             05-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAC62810
                                                                                                                                                                   2000-647236/62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                          æ
                                                                                                                                                                                                                 GENESIS RES & DEV CORP LTD.
FLETCHER CHALLENGE FORESTS
                                                                                                                                                       AAB28142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                              Page 61-62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard; DNA; 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATCGAACCTCCACCACACACACACCACCACCACCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCGAACCTCCACCACCATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATATTGGTGTAGGGTCCAATATTTTGCGGGAAGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGTTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                        Rice SJ,
                         material
                                                                                                                                                                                                                                                                                                                                                                                                                                 (first
 B₽;
                                                                                                                                                                                                                                                  99US-00276599.
99US-0146591P.
  537 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry)
                                                                                            93pp;
                                                                                                                                                                                          Eagleton
 535
                                                                                              English
 Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽P
  539
                                                                                                                                                                                                                  LTD.
  <u>ဂ</u>
  485 T; 0 U;
  0
   Other;
                                                                                                                                  õ
                                                  is useful
The
                                                                                                                                 plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
```

Query Match 97.9 Best Local Similarity 98.9 Matches 622; Conservative

97.0%; 98.9%;

<u>;</u>

Score 606.2; DB 3; Pred. No. 2.5e-183; 0; Mismatches 3;

Length 2096; Indels

4.

Gaps

```
S
                                                                                                                                                                                                                                                                                                                                                                     유 상 유
                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                       Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; ss; PCR primer.
                                                                                                                                   Eucalyptus grandis
                                                                                                                                                                                                                                                                     ABK17075 standard; cDNA;
(GENE-)
                                                                                                              WO200198485-A1
                                                                                                                                                                                                  Eucalyptus grandis promoter polynucleotide #31.
                                                                                                                                                                                                                           26-MAR-2002
                                                                                                                                                                                                                                                 ABK17075
                                20-JUN-2000;
28-NOV-2000;
                                                                20-JUN-2001; 2001WO-NZ000115
                                                                                                                                                                                                                                                                                                                               641
                                                                                                                                                                                                                                                                                                                                                   597
                                                                                                                                                                                                                                                                                                                                                                          581
                                                                                                                                                                                                                                                                                                                                                                                                537
                                                                                                                                                                                                                                                                                                                                                                                                                       521
                                                                                                                                                                                                                                                                                                                                                                                                                                             477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41
GENESIS RES & DEV CORP LTD PLETCHER CHALLENGE FORESTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                   CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                          TATCGAACCTCCACCACCATACCTCCACTTCAATCCCCCACCACTTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGTTTTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                              CTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                      ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                2000US-00598401.
2000US-00724624.
                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                       2096
                                                                                                                                                                                                                                                                       В₽
 IND LTD
                                                                                                                                                                                                                                                                                                                              669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                596
                                                                                                                                                                                                                                                                                                                                                                                                                                             536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                          640
                                                                                                                                                                                                                                                                                                                                                                                                                       580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
```

```
Perera
                            20
                            Rice S,
                            Eagleton
                            Ç
                            Lasham
```

Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.

78; 121pp; English

production of genetic constructs, used for modifying gene expression in a target organism, in particular a plant. The method is useful for modifying expression of a polynucleotide that comprises an intron sequence, through removal of the intron sequence. The method is useful for modifying growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional cloning of genes, in various assays to determine biological activity, to raise antibodies, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or other compounds. Sequences ARK17016-ARK17125 represent Pinus radiata and of t The invention relates to isolated promoter sequences from Pinus radiata and Eucalyptus grandls, comprising a sequence chosen from leaf., root., flower. pollen. bud. meristem-specific promoters or temporally regulated promoters such as xylogenesis-specific promoters. The promote polypeptides and their related polynucleotides are useful in the promoters of descriptions of control of the promoters and their related polynucleotides are useful in the l Bucalyptus grandis polynucleotides and PCR primers used in the method the invention promoter

Sequence 2096 BP; 537 A; 535 C; 539 <u>.</u> 485 T; 0 U; 0 Other;

5 멼 S 밁 á Ś 吊 5 밁 5 문 5 S 吊 밁 밁 δ Query Match Best Local S Matches 622; 477 401 361 341 301 281 241 461 417 221 181 161 121 101 61 41 Similarity CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC AACTCCGTATTTCTCTCACTTCCATAAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGATCCAACCTTTCCTTAACAAG GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT Conservative 97.0%; 0; Mismatches Score 606.2; Pred. No. 2. 2.5e-183; B 6, Indels Length 2096; 4 Gaps 536 . 120 476 416 100 60 580 460 400 360 340 280 240 160 220

Thu

```
ARBSULT 10
ADH75476
ID ADH775776
ID ADH775
XX ADH77
XX ADH77
XX Euca
DT 22-Al
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX Euca
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice
XX I Rice

ն
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                            밁
                                                                                                                                 Ş
                                                                                                                                                                                     밁
                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                              Ś
                                            8
                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GENE-)
(RUBI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADH75476 standard; DNA; 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to a new isolated polynucleotide comprising the pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or a sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to a superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New polynucleotide of the superubiquitin promoter from Pinus radiata, useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO2003093475-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ds; Monterey pine;
transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADH75476;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; SEQ ID NO 60; 123pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2003-903678/82.
                                                                                                 161
                                                                                                                                                                                          101
                                                 181
                                                                                                                                             121
       221
                                                                                                                                                                                                                                                                                                                                                                                     622;
                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                         41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENESIS RES & DEV CORP LTD. RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2096
                                                                                                                                                                                                                                                                                                                       CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                          CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                     CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                      creaeccartraatrogagaecacareeccaaaartratretretreereecataacter
                                     AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                            ĠŦĀŦĠĀŦĊŦŦĠĠĀĠŦŦĠŦŦĠĠŦĠĊĀĀĀŦŦŦĠĊĀĀĠĊŦĠĀĊĠĀŦĠĠĊĊĊĊŦĊĀĠĠĠĀĀĀŦŦ
                                                                                                                            GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTT
       Wood M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                superubiquitin related sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                superubiquitin; promoter; gene expression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                         97.0%;
                                                                                                                                                                                                                                                                                                                                                                                     Score 606.2; 1
Pred. No. 2.5e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP
                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Visser ES,
                                                                                                                                                                                                                                                                                                                                                                                                                .5e-183;
                                                                                                                                                                                                                                                                                                                                                                                                                                         멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               æ
                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              596
                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                             220
                                                                                                                                                          180
                                                                                                                                                                                                       160
                                                                                                                                                                                                                                                      120
                                                              240
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
RESULT 11
ADW80510
ID ADW80500
XX ADW80
XX ADW80
XX ADW80
XX ADW80
XX ADW80
XX Bs; v
KW trans
XX Eucal
XX Eucal
XX ADW80
PN 03-PN
PR 25-Nu
PR 24-PN
PR 24-PN
PR 24-PN
PR 24-PN
PR 24-PN
PR 24-PN
PR 24-PN
PR 24-PN
PR 30-A
PR 24-PN
PR 30-A
PR 30-A
PR 24-PN
PR 30-A
PR 30-A
PR 30-A
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18-Nu
PR 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                       30-JUL-1999;
24-FEB-2000;
20-JUN-2000;
28-NOV-2000;
09-NOV-2001;
30-APR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADW80510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADW80510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-NOV-2003; 2003US-00702319
                                                                                                                                                                                                                                                                                 08-NOV-2002;
08-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-FEB-2005.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2005026162-A1.
                                      New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                              WPI; 2005-131806/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     grandis caffeic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          wood; plant; transcription; caffeic acid O-methyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281
                                                                                                                                                                       ₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                  GENESIS
RUBICON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTCGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plant.
                                                                                                                                                                           Rice
                                                                                                                                                                                                                                                                                 2000WO-NZ000018.

2000WS-00598401.

2000WS-00724624.

2001WS-0345397P.

2001WS-0345397P.

2002WS-00137036.

2002WS-00291447.

2002WS-00291479.

2002WS-0425087P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-00276599.
                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0146591P.
                                                                                                                                                                         SJ,
                                                                                                                                                                                                                    RES & DEV CORP LTD.
FORESTS HOLDINGS LT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acid O-methyltransferase related cDNA SEQ ID NO:60.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                         Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВÞ
                                                                                                                                                                              Ç
                                                                                                                                                                                                                        TTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              580
```

Claim 3;

SEQ ID

NO 60; 82pp; English

```
RESULT 12
ADQ88319
ID ADQ88
XX
AC ADQ88
XX
DT 21-00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            $666666666666688$
                                                                                                                                                                                                      S
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                               정 유
                                                                                                                                                                                                                                                                                                                      ર્જ
                                                                                                                                                                                                                                                                                                                                                   유정
                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                        ર્શ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to a novel isolated polynucleotide sequence comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (cOMT) promoter (ADW80462 or ADW80563). Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADW80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used in the composition and methods are useful for modifying the transcription of endogenous and/or heterologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2096 BP;
                            ADQ88319;
                                                       ADQ88319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mac
Local 622;
                                                                                                                                                                                                                                                                                                                                                             401
                                                                                                                                                                                                                                                                                                                                                                                                                   341
                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                             641
                                                                                                                                                                                    581
                                                                                                                                                                                                               537
                                                                                                                                                                                                                                             521
                                                                                                                                                                                                                                                                         477
                                                                                                                                                                                                                                                                                                    461
                                                                                                                                                                                                                                                                                                                               417
                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTTGCAAGCTGACGATGGCCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                             ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                             CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 669
                                                                                                                                               CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                   AACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                       standard;
                                                                                                                                                                                                               TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                              AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            537
                                                       DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; 535 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 606.2;
Pred. No. 2.5e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            539 G; 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.5e-183;
ches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ď;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                 596
                                                                                                                                                                                                                                                                         536
                                                                                                                                                                                                                                                                                                                                 476
                                                                                                                                                                                      640
                                                                                                                                                                                                                                              580
                                                                                                                                                                                                                                                                                                                                                             460
                                                                                                                                                                                                                                                                                                                                                                                                                    400
                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             220
```

21-OCT-2004

(first entry)

452

AGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGG

511

```
문
                             Ş
                                                               밁
                                                                                      Ş
                                                                                                                       밁
                                                                                                                                                        S
                                                                                                                                                                                         밁
                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymucleotides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lignin biosynthetic gene and thereby alter the lignin content in plants, to modify properties such as cellulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-O-methyl transferase (COMT) promoter that confers xylem-preferred gene expression in a plant cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transcription; xylogenesis; gene expression; transgenic plant; lignin cellulose; wood; disease resistance; caffeic acid 3-O-methyl transferase promoter; COMT promoter; xylem; disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New isolated polynucleotide from Eucalyptus grandis that is capable initiating and promoting transcription of polynucleotides in plant of undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; SEQ ID NO 1; 32pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-NOV-2003; 2003US-00703091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eucalyptus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-NOV-2002; 2002US-0428087P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in a plant
                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                               181
                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                  534;
                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                     92
                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                       ATGCGCCATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                534 BP; 151
                      GAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGG
                                                                                   CTGATTAATTTGGTGGGAAAGCGACAGCCCACCAAAAGGTCAGATGTCATCCCACGA
                                                                                                                              AGAGCACGACCCTTTCCTTAACAAGATCACCACGATCGGCCAGTAAGGGTAATA
                                                                                                                                                                                                                                                         CAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAA
                                                                                                                                                                                                                                                                                        CAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCCAGATTGCAAAGAGCACAA
                                                                                                                                                                                                                                                                                                                       ATGCGCCATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTG
                                                                   CTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGA
                                                                                                                                                   AGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      grandis COMT
                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                A; 126 C; 119 G; 138 T; 0 U;
                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                   85.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      promoter
                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                   Score 534; DB 13; Pred. No. 1.9e-160;
                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #1
                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0 Other;
                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plant c
                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cells
                                     451
                                                                                                                                                                                                                                                            120
                                                                                                    391
                                                                                                                                                                                                                                                                                                                         60
```

```
RESULT 13
ADQ88320
ID ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ACQ
IT ADQ88
AC ACQ
IT ADQ88
AC ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ
IT ACQ

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                      á
                                                                                밁
                                                                                                                                 S
                                                                                                                                                                                          Query Match
Best Local Sim
Matches 485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transcription; xylogenesis; gene expression; transgenic plant; lignin; cellulose; wood; disease resistance; caffeic acid 3-O-methyl transferase promoter; COMT promoter; xylem; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADQ88320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADQ88320
                                                                                                                                                                                                                                                                                                                                                                         The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis. The invention also provides DNA in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used constructs comprising the promoter sequence of the invention can be used to regulate the expression of lignin biosynthetic gene and thereby alter the lignin content in plants, to modify properties such as cellulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-0-methyl ransferase (COMT) promoter that confers xylem-preferred gene expression in a riange call
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-NOV-2003; 2003US-00703091.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2004146904-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2004-552666/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ARBO-) ARBORGEN LLC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-NOV-2002; 2002US-0428087P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID NO 2; 32pp; English.
                                                                                                                                                                                                                                                                                                    Sequence 485 BP; 138
                                                                                                                                                                                                                                                                                                                                                              in a
                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                              plant
                                                                                                                                            141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ĠſŢĠĠŢĠĀĀĊĊĠĊĀĀĀĠŢŢĊĊŢĀŢĀŢĀŢĊĠĀĀĊĊŢĊĊĀĊĊĀŢĀĊĊŢĊĀĊŢŢĊĀĀŢĊĊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCACCATTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      standard;
AAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG
                                                                                                                  GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        grandis COMT promoter
                                                                                                                                                                                                                                                                                                                                                                ce11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA; 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                        rgcaagerrgaegarggeeeercagggaaarraaggegeeaaceeagarrge
                                                                                                                                                                                                                          77.6%;
                                                                                                                                                                                                                                                                                                             A; 120 C; 105 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽P
                                                                                                                                                                                                   Score 485; DB; Pred. No. 9.6
0; Mismatches
                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #2
                                                                                                                                                                                                                                                                                                                     122 T; 0
                                                                                                                                                                                                                                  9.6e-145;
                                                                                                                                                                                                                                                               DB 13;
                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                     U; 0 Other;
                                                                                                                                                                                                                                                               Length 485;
                                                                                                                                                                                                              Indels
                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            625
                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                             6
                                                                                                                                                                                                                    0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
ARBSULT 1
AD083131
ID AD083
AC AD0
XX AD0
XX AD0
XX 21-
XX Tra
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX Cal
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transcription; xylogenesis; gene expression; transgenic plant; lignin; cellulose; wood; disease resistance; caffeic acid 3-O-methyl transferase promoter; COMT promoter; xylem; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eucalyptus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADQ88321 standard; DNA; 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US2004146904-A1
                                                                                                                                                                                                                                                                                                                             New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               07-NOV-2003; 2003US-00703091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2004-552666/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-NOV-2002; 2002US-0428087P
                                                                                                                                                                                                                                                                   Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (ARBO-) ARBORGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCATAAACCCCTGATTAATTTCGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        raagggraararraarraaccaaaragcrerrgraeccgggaacreccgrarrrererener 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŢĊĀŢĊĊĊĀĊĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠŦŢŢŢĊŢĊŢĀŢĀŢŦŢCŢĠŢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rrigogogogogorrogrogados es a compresentados es estados es estados estados estados estados estados en estados estados en entrator en estados en estados en estados en estados en estados en estados en estados en estados en estados en estados en estados en entrator en estados en estados en estados en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrator en entrato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCACCATACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŗ
                                                                                                                                                                                                                                                                       SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         grandis COMT promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      625
                                                                                                                                                                                                                                                                       ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entry)
                                                                                                                                                                                                                                                                   32pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ü
                                                                                                                                                                                                                                                                           English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    #3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                620
```

The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides is capable of initiating and promoting transcription also provides DNA in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used

```
ARESULT 15
ADQ88322
ID ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ADQ88
AC ACQ1
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
CONT 21-OC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ពួក្ខព្តព្តព្តន្ត្ត
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to regulate the expression of lignin biosynthetic gene and thereby alter the lignin content in plants, to modify properties such as cellulose synthesis, wood development, flowed present sequence is Bucalyptus grandis caffeic acid 3-0-methyl transferase (COMT) promoter that confers xylem-preferred gene expression
                                             New isolated polynucleotide from Eucalyptus grandis that is capable initiating and promoting transcription of polynucleotides in plant cundergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transcription; xylogenesis; gene expression; transgenic plant; lignin; cellulose; wood; disease resistance;
  Claim 1; SEQ ID NO 4;
                                                                                                                                                         WPI; 2004-552666/53
                                                                                                                                                                                                            Phillips J,
                                                                                                                                                                                                                                                               (ARBO-)
                                                                                                                                                                                                                                                                                                             21-NOV-2002; 2002US-0428087P.
                                                                                                                                                                                                                                                                                                                                                                07-NOV-2003; 2003US-00703091.
                                                                                                                                                                                                                                                                                                                                                                                                                      29-JUL-2004.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2004146904-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eucalyptus grandis COMT promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADQ88322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADQ88322 standard; DNA; 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 306 BP; 80 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           plant cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -
                                                                                                                                                                                                                                                               ARBORGEN LLC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTATATTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGAA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCTGAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCCACAAAAGGTCAGAT 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative 0;
                                                                                                                                                                                                            Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3-0-methyl transferase promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49.0%; Score 306; DB 13; 100.0%; Pred. No. 2.2e-87;
  32pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ς,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13; Length 306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMT promoter; xylem; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Other:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              439
```

```
S
                                                                밁
                                                                                                 Ś
                                                                                                                                        밁
                                                                                                                                                                    5
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                               X SSSSSSSSSSSSSXXX
                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymucleotides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lignin biosynthetic gene and thereby alter the lignin content in plants, to modify properties such as cellulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-0-methyl transferase (COMT) promoter that confers xylem-preferred gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 293 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in a plant cell.
                                                                                                                                                                                                                                                                                                                      333
                                                                      181
                                                                                                       513
                                                                                                                                        121
                                                                                                                                                                           453
                                                                                                                                                                                                                                                393
241
                                                                                                                                                                                                                                                                                                                                                           293;
                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                  TGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGAG
                      CACCATTTATCCGTTTTATTTCCTCTGCTTTTCCTTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                              GTCAATGGCATGCGTGACGAATGTACATATTGGTGTACGGTCCAATATTTTGCGGGAGGG
                                                                                                                                                                                                                                       AGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGA
CACCATTTATCCGTTTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                                                                      TTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATCCC
                                                                                                       TTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATCCC
                                                                                                                                          GTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGG
                                                                                                                                                                                                               AGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGA
                                                                                                                                                                                                                                                                                     TGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGAG
                                                                                                                                                                                                                                                                                                                                                         46.9%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                               76
                                                                                                                                                                                                                                                                                                                                                                                                                            A; 67
                                                                                                                                                                                                                                                                                                                                                                                                                               c;
                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                        Score 293; DB 13;
Pred. No. 3.2e-83;
                                                                                                                                                                                                                                                                                                                                                                                                                              70 G;
                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                               80 T;
                                                                                                                                                                                                                                                                                                                                                                                                                               0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                               Other;
                                                                                                                                                                                                                                                                                                                                                                                          Length 293;
                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                         0;
 293
                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                         572
                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                    452
                                                                                                                                                                                                                                                                                     60
                                                                      240
                                                                                                                                            180
                                                                                                                                                                             512
                                                                                                                                                                                                                                                                                                                                                           0
```

Search completed: November 1, 2006, 00:21:20
Job time : 265.41 secs

THIS PAGE LEFT BLANK

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run
                                                                                                                                                                                                                              Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                     ი
                                                                        იი
                                                                                                                               იი
                                                                                                                                                              a
                                                                                                                                                                                               Ω
                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      on:
                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                   Score
seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
                                                                                                                                                                                                                   Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-702-319A-113_COPY_1019_1643
625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              October 31, 2006, 23:29:19; Search time 2031.12 Seconds (without alignments)
17207.024 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48236798 seqs, 27959665780 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ctgagccatttaattcgaga.....tttgctcgagtctcgcggaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Copyright
                                                                                                                                                                                                                                                                                                                gb_est2:*
gb_est7:*
gb_est8:*
gb_est9:*
gb_gss1:*
gb_gss2:*
gb_gss3:*
gb_gss4:*
                                                                                                                                                                                                                                                                                                                                                                                                         gb_htc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_est4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                    est6:*
                                                                                              589
675
1019
771
363
543
588
669
677
746
927
499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                    IJ
                             BH873693
CC693540
CG241281
                                                             BZ708983
BZ306338
                                                                                                        AZ829144
DV761691
DW344263
                                                                                                                                                             CE792380
BZ731304
AG559107
DT310002
           AZ360328
CC671328
                                                                                    DT234659
                                                                                               AG403694
                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                              1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96473596
                                                                                                                             AG559107 Mus muscu
DT310002 JGI CAAX1
BB931786 BB931786
CX600115 AGENCOURT
AZ829144 2M0106C09
                             BH873693
CC693540
CG241281
                                                                                                        DV761691
DW344263
                                                                                                                                                                                  CE792380
BZ731304
                                                                                                                                                                                                                   Description
                                                                                   AG403694
DT234659
          1 PChrSEQOO
3 PP LECOO1
4 Mus muscu
9 JGI CAAT8
3 CGEAW41TM
8 hx41a10.b
3 hp46c12.g
0 OGWFD96TV
1 OGWAX91TV
8 1MO103G2O
8 OGWCY78TV
                                                                                                                                                                                  tigr-gss-
OGFBZ50TC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     625
```

ი	c						a	ი		O		ი	ი	ი	a			ი	n	ი	a	ი	ი		
45	44	43	42	41	40	9	38	37	36	ω S	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20
43	43.2	43.2	43.2	43.4	43.4	43.4	43.6	43.6	43.6		43.6	43.6	43.6	43.8	43.8	44	44	44.2	44.2	44.2	44.2	44.2	44.4	44.4	44.4
6.9	6.9	6.9	6.9	6.9	6.9	6.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
216	738	600	508	3304	1100	1044	810	750	717	597	442	440	232	897	879	522	408	989	776	759	719	666	757	658	550
1	14	N	ω	σ	11	w	œ	14	12	11	14	11	11	14	10	11	æ	14	14	10	10	μ	11	11	4
AZ384008	AG562107	BG803750	BQ103940	AK079471	BZ117558	BM800931	CN531411	AG482398	CE081925	AZ460974	CR192806	AZ001211	BZ280453	AG844971	DW345288	AZ440830	CO910517	CNS05RZJ	CNSOLJUK	DW103368	DT726802	AV368360	BZ076780	AZ592362	BX250092
AZ384008 1M0141D19	AG562107 Mus muscu	BG803750 0241-38 M	BQ103940 gg0575.e	AK079471 Mus muscu	BZ117558 CH230-460	BM800931 AGENCOURT	CN531411 UI-M-HQ0-	AG482398 Mus muscu	CE081925 tigr-gss-	AZ460974 1M0266C08	CR192806 Reverse s	AZ001211 RPCI-23-3	BZ280453 CH230-309	AG844971 Oryza sat	DW345288 PP_LEC002	AZ440830 1M0232P06	CO910517 BJ03007C0	AL351208 Tetraodon	AL147517 Anopheles	DW103368 CLPZ739.b	DT726802 EST116065	AV368360 AV368360	BZ076780 lkf74g10.	AZ592362 1M0403A17	BX250092 BX250092

ALIGNMENTS

```
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 1
CE792380/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                           ORIGIN
                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
Query Match 7.6%;
Best Local Similarity 62.7%;
Matches 74; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        561 bp DNA linear GSS 30-SEP-20
tigr-ges-dog-17000330896927 Dog Library Canis familiaris genomic,
genomic survey sequence.
CE792380
                                                                                                                                                                                                                                                                                               Contact: Kirkness EF
The Institute for Genomic Research
Department of Eukaryotic Genomics,
Rockville, MD 20850, USA
Tel: 301-838-0208
Fax: 301-838-0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kirkness,B.F., Bafna,V., Halpern,A.L., Levy,S., Remington,K.,
Rusch,D.B., Delcher,A.L., Pop,M., Wang,W., Fraser,C.M. and
Venter,J.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                The dog genome: survey sequencing and comparative analysis Science 301 (5641), 1898-1903 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CE792380.1 GI:37133144 GSS.
                                                                                                                                                                                                                                                            Email: ekirknes@tigr.org
Class: shotgun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Laurasiatheria; Carnivora; Fissipedia; Canidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Canis familiaris (dog)
Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                               14512627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 561)
                                                                                        /organism="Canis familiaris"
/mol_type="genomic DNA"
/strain="Standard Poodle"
/db_xref="taxon:9615"
/clone_lib="Dog_Library"
/note="Site_1: BstXI; Libraries were_pr
                                                                                                                                                                                                                                             ocation/Qualifiers
                                                                                                                                                                                                                             . .561
     0
 Score 47.6; DB 12;
Pred. No. 0.014;
0; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                           TIGR, 9712 Medical Center Drive
     Indels
                                        Length 561;
                                                                                                               prepared
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 30-SEP-2003
     0,
                                                                                                                   from
     Gaps
     0
```

O

```
RESULT 2
BZ731304
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                        RESULT 3
AG559107
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
 ACCESSION
                                                                                                                               Ś
                                                                                                                                                            밁
                                                                                                                                                                                  Ś
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                         밁
                                                                                                                                                                                                                                                                                                                      ORIGIN
                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                               Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             363
                                                                                                                                                                                                                                          300
                                                                                                                                                                                       360
                                                                                                          124 G 124
                                                                                                                                   420 G 420
                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 760)

Nhitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T., Rebnick, A., Fraser, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T., Citek, R.W., Nunberg, A., Robbins, D. and Lakey, N. Consortium for Maize Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zea mays
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD
clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genomic survey sequence.
BZ731304
BZ731304.1 GI:28705008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BZ731304 760 bp
OGFBZ50TC ZM_0.7_1.5_KB Zea mays
                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: whitelaw@tigr.org
Seg primer: TF
Class: methylation filte:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (2002)
Other_GSSs: OGFBZ50TM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zea mays
Mus musculus molossinus DNA, sequence. AG559107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 301-838-5843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                  h 7.6%;
Similarity 62.0%;
75; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fax: 301-838-0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCTCTCTCTCTGCCTCTCATGAATAAATAAATAAAATCTTTAAAAAAGAATACATAA 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            crccetartrcrcrcacrrccaraaaccccrearraatrregregeaaaeceaceaeceae
                                                                                                                                                                                     GAACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGC
                                                                                                                                                              ĠĄĠĠŢĊĊĠŢŢĠŢŖŢĠŢŖŢĠŢĸŢĸŢĸŢĸŢĸŢĸĊŢĠĠĊĸĸĸŢĸĸŢĠĸŢĠŢĸŢĠĸĸĊĠĸĊĠĠĊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Medical Center Drive, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     methylation filtered.
                                                                                                                                                                                                                                                                                                                                   /clone="ZMMBMa0249J04"
/clone | 11b="ZM 0.7_1.5_KB"
/note="Vector: pBCSK-; Site 1: HincII; 0.7-1.5
methylation filtered genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Zea mays"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                    /strain="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                         . .760
                                                                                                                                                                                                                                                                                                                                                                                       db_xref="taxon:4577"
                                                                                                                                                                                                                                                                    <u>.</u>
                                                                                                                                                                                                                                                                   Score 47.4; DB 12; Pred. No. 0.017; 0; Mismatches 46;
                        op DNA linear GSS 23-DEC-2004 clone:MSMg01-477N16.T7, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA linear GSS 03-MAR-2003 genomic clone ZMMBMa0249J04,
                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      362
                                                                                                                                                                   123
                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                               359
                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                        RESULT 4
DT310002/c
                                                                                                                                                 Ş
                                                                                                                                                                                  밁
                                                                                                                                                                                                         S
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                             rocus
            ACCESSION
                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                  339
                                                                                                                               399
                                                                                                                                                        510
                                                                                                                                                                                                             450
                                                                                                                                                                                                                                       279
                                                                                                                                                                                                                                                                                         76;
```

```
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             390 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hattori,M., Toyoda,A., Noguchi,H., Kojima,T. and Sakaki,Y.

Direct Submission
Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical
submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical
and Chemical Research (RIKEN), Genomic Sciences Center (GSC);
and Chemical Research (RIKEN), Genomic Sciences Center (GSC);
and Chemical Research (Triven), VRL:http://hgp.gsc.riken.go.jp/,

(E-mail:hattori@gsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/,
Tel:81-45-503-911, Fax:81-45-503-9170)

Clones are derived from the mouse BAC library MSMg01. For BAC
Clones are derived from the mouse BAC library MSMg01. For BAC
Library availability, please contact Kuniya Abe (abe@rtc.riken.jp).
Tsukuba Institude, Bio Resource Center,
The Institute of Physical and Chemical Research (RIKEN) 3-1-1
KOyadai, Tsukuba, 305-0074 Japan
phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus molossinus (Japanese wild mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vector
R.Site 1
R.Site 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Abe,K., Noguchi,H., Tagawa,K., Yuzuriha,M.,
Bzawa,K., Saitou,N., Hattori,M., Sakaki,Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AG559107.1 GI:48319805
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contribution of Asian mouse subspecies Mus musculus molossinus to genomic constitution of strain C57BL/6J, as defined by BAC-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence-SNP analysis
Genome Res. 14 (12), 2439-2447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shiroishi, T.
DT310002

OT310002

JGI_CAAX1533.rev CAAX Pimephales promelas testis 7-8 month adults, males and females pooled (L) Pimephales promelas cDNA clone CAAX1533 3', mRNA sequence.

DT310002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequencing : T7
LIBRARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e-mail: abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15574823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                            GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGA 509
                                                                                                                                                                                                                                                                                                                                                                                                                            GGGTTGGTG 518
                                                                                                                                                                                                                              GEGGTEGTE 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 831)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="genomic DNA"
/sub_species="molossinus"
/db_xref="taxon:57486"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Mus musculus molossinus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="mixture of kidney and spleen"
/clone_Tib="MSMg01 Mouse Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         clone="MSMg01-477N16.T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . .831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Toyoda, A., Noguchi, H., Kojima, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pBACe3.6
EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ECORI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 46.6; DB Pred. No. 0.03; O; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Toyoda, A.,
Moriwaki, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 831;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and Sakaki, Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kojima, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                           398
                                                                                                                                                                                                                                                                                                                                                                                                                                         338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

٠,

```
RESULT 5
BB931786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                     DEFINITION
                                                                                                                                                               rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                     154
                                                                                                                                                                                                                                                                                                                                                                                                                                            393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: cdna@jgi-psf.org
CDNA Library Preparation: DOE Joint Genome Institute:
http://www.jgi.doe.gov
DNA Sequencing: DOE Joint Genome Institute: http://www.jgi.doe.gov
NAMING Conventions: EST name is generated by the concatenation of
the JGI Clone Id and the direction of sequencing: The suffix '.rev'
indicates a reverse sequencing read of the insert. It does not
necessarily reflect the orientation of the insert.
Poly-A: Based upon the presence of a run of 14 or more T residues
at the beginning of the sequence, this clone was polyadenylated.
The resulting Poly-T sequence has been removed.

The resulting Poly-T sequence has been removed.

The resulting Poly-T sequence has been removed.
                             349 bp mRNA linear EST 29-JAN-2006
BB931786 Trifolium pratense three week-old plant SSR-enriched
library Trifolium pratense cDNA clone RCC03640, mRNA sequence.
BB931786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: LindquIst,E.A., Richardson,P.
DOB Joint Genome Institute
2800 Mitchell Drive, Walnut Creek, CA 94598,
Tel: 925 296 5600
Fax: 925 296 5710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brokstein, P. and Lindquist, E.A.

DOE Joint Genome Institute Pimephales promelas EST project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes; Cyprinidae; Pimephales.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DT310002.1 GI:73650665
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POLYA=Yes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Other_ESTs: JGI_CAAX1533.fwd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Richardson, P., Lucas, S., Rokhsar, D., Detter, J.C., Ng, D.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pimephales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                     TGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 619)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="testis"
/clone_Tib="cAAX Pimephales promelas testis 7-8 month
/clone_Tib="cAAX Pimephales pooled (L)"
adults, males and females pooled (L)"
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was made from dT
/note="Vector: pCMVsport6; The library was m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        selected using 1.1% agarose gel electrophoresis (L \sim 0.5-1.2k, M \sim 1.2-2.5k, H \sim > 2.5k) then ligated into NotI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to a Sall adapter (5'- TCGACCCACGCGTCCG and 5'-CGGACGCGTGGG) and digested with Not1. cDNA was size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and SalI digested pCMVsport6 vector.
DOE Joint Genome Institute."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/db_xref="taxon:90988"
/clone="CAAX1533"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Pimephales promelas"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     promelas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7.4%;
70.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 46.4; DB 10;
Pred. No. 0.032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The work was done
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CK600115/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        293
                                    Unpublished (1999)
Contact: Daniela S. Gerhard, Ph.D.
Contact: Daniela S. Gerhard, Ph.D.
Office of Cancer Genomics
National Cancer Institute / NIH
Bldg. 31 Rm1DA07 Bethesda, MD 20892
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Howard Jacobs
CDNA Library Preparation: Express Genomics
CDNA Library Preparation: Express Genomics
CDNA Library Preparation: In.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity 71; Conserv
                                                                                                                                                                                                                                                                             1 (bases 1 to 799)
NIH-MGC http://mgc.nci.nih.gov/
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CK600115 799 bp mRNA linear EST 22-JAN-2004
AGENCOURT 17895063 NIH_MGC_234 Rattus norvegicus cDNA clone
IMAGE:7189967 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Email: asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sato, S., Isobe, S., Asamizu, E., Nakamura, Y., Ohmido, N., Sakurai, N., Klimenko, I., Sasamoto, S., Wada, T., Watanabe, A. and Tabata, S. Comprehensive structural analysis of the genome of red clover
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; eurosids I; Fabales; Fabaceae; Papilionoideae; Trifolieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The First Laboratory for Plant Kazusa DNA Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Trifolium pratense
                                                                                                                                                                                                                                                                                                                                                    Sciurognathi; Muroidea; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Mētazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CK600115.1 GI:41113272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Erika Asamizu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Trifolium pratense
found through the I.M.A.G.E. Consortium/LLNL http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Trifolium pratense)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATG 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 349)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /dev stage="three week-old plant"
/clone lib="Trifolium pratense three week-old plant
SSR-enriched library"
/note="Vector: pT7Blue T-Vector; Site_1: EcoRV; variety:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hokuseki"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/db_xref="taxon:57577"
/clone="RCC03640"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Trifolium pratense"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (2006)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 45.8; DB 7;
Pred. No. 0.042;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plant Gene Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42;
                                                                                                                                                                                                                                                                                                                                                        Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

Thu

Nov

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
AZ829144/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
FEATURES
                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     High quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plate: LLAM15046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 Similarity
71; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A2829144 S89 bp DNA linear GSS 20-FEB-2001 2M0106CO9R Mouse 10kb plasmid UUGCIM library Mus musculus genomic clone UUGC2M0106CO9 R, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                 Dunn,D., Aoyagi,A., Barber,M., Beacorn,T., Duval,B., Hamil,C., Islam,H., Longacre,S., Mahmoud,M., Meenen,E., Pedersen,T., Reilly,M., Rose,M., Rose,R., Stokes,R., Tingey,A., von Niederhausern,A. and Wright,D.,Weiss,R. Mouse whole genome scaffolding with paired end reads from 10kb Nouse whole genome scaffolding with paired end reads
                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Mus.
1 (bases 1 to 589)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AZ829144.1 GI:12999052 GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (house mouse)
                                                                                                                                                                                                                        University of Utah Genome University of Utah
                                                                                                                                                                                                                                                                Unpublished (2000)
Contact: Robert B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAG 490
    Plate: 0106 row: C column: 09
Seq primer: CARCAGGAAACAGCTATGACC
Class: plasmid ends
High quality sequence stop: 589.
Location/Qualifiers
                                                                                                                                           Tel: 801 585 5606
Fax: 801 585 7177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTAGTAACTTGGTNGGTGTTAACCCCCTTTCCTCCTAAATGTTCAATCCTGTAG 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ĊĀCĀCĀĀCĀTĊCĊNGĠNĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĠĀĀĀTĀTCĀĀGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGATGTÇATÇÇCACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATAT 434
                                                                                   Email: ddunn@genetics.utah.edu
Insert Length: 10000 Std Error: 0.00
Plate: 0106 row: C Column: 09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                      308,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="mRNA"
/db_xref="taxon:10116"
/clone="IMAGE:7189967"
/clssue_type="heart, poc/tissue_type="heart, poc/tissue_type="heart, poc/tissue_type="DH10B TonA"
/lab_host="DH10B TonA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone libe "NIH MGC_234"
/clone | The "NIH MGC_234"
/note="Organ: heart; Vector: pExpress-1; Site 1: EcoRV;
/note="Organ: heart; Vector: pExpress-1; Site 1: EcoRV;
/note="Organ: heart; Vector: perpension of heart tissue from a Site 2: Not1; RNA obtained from pooled heart tissue from a Site 2: Not1; RNA obtained from pooled heart tissue from a state who does not seem to days before RNA snap-frozen and kept at -80C for two days before RNA snap-frozen and purification (Tri-reagent method). cDNA was extraction and purification (Tri-reagent method). cDNA was primed using oligo-dT primer: primed using oligo-dT primer: primed using oligo-dT primer:
                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the EcoRV/NotI sites of pExpress-1. Size-selection >1.4kb resulted in an average insert size of 2.2 kb. This primary library is normalized (non-normalized primary library is NIH_MGC 233) and was constructed by Express Genomics (Frederick, MD). Note: this is a NIH_MGC library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                           inserts
                                                                                                                                                                                                      Biomedical Polymers Research Bldg., 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             row: k column:
                                                                                                                                                                                                                                                                    Weiss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 45.8; DB!
Pred. No. 0.051;
0; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              641.
                                                                                                                                                                                                                                                     Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pooled"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 5; Length 799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                     ŝ
                                                                                                                                                                                                                     2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                        SLC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
DV761691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best
                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                         JOURNAL
                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DV761691
DV761691.1 GI:82605802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DV761691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence.
                                                                                                                                                                                                                                                                         Unpublished (2005)
                                                                                                                                                                                                                                                                                                             Tsang, A., Storms, R
Expressed sequence
                                                                                                                                                 ax: 514 848 4504
                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 675)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="UUGC2M0106C09"
                                                                                         Location/Qualifiers
                                /mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68.5%;
```

```
(http://www.jax.org/resources/documents/dnares/). The DNA (http://www.jax.org/resources/documents/dnares/). The DNA (http://www.jax.org/resources/documents/dnares/). The sheared DNA 0.005 inch orifice at constant velocity. The sheared DNA 0.005 inch orifice at constant velocity. The sheared DNA 0.005 inch orifice at constant velocity. The sheared DNA was blunt ends in high molar excess. The ligated to the blunt ends in high molar excess. The adaptored DNA was purified and size-selected for a 9.5 to adaptored DNA was purified and size-selected from a derivative electrophoresis. Vector DNA was prepared from a derivative of pwD42 (gi 4732114 |gb|AF129072.1), a copy-number of bwD42 (gi 4732114 |gb|AF129072.1), a copy-number inductible derivative of plasmid R1. The vector was ligated with adaptors complementary to the insert adaptors and purified. The sheared, adaptored mouse DNA was annealed to adaptored vector DNA, and transformed into adaptored vector DNA, and transformed into adaptored created by a copy-number of the sheared. Scoli XL10-Gold (Stratagene) cells and selected for ampicillin resistance."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /lab host="B. Coli strain XL10-Gold, T1-resistant, F-"
/clone lib="Mouse 10kb plasmid UUGC1M library"
/note="Tvector: PWD42nv; Purified genomic DNA from M.
musculus C57BL/6J (male) was obtained from the Jackson
Laboratory Mouse DNA Resource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .589
/organism="Mus musculus"
/mol_type="genomic DNA"
/mstrain="C57BL/6J"
Length 589;
```

329 сссстватталттествегасарарассарскегорастарарандастся в 388 Phanerochaete chrysosporium (anamorph: Sporotrichum pruinosum)
Phanerochaete chrysosporium
Phanerochaete chrysosporium PchrSEQ004644 Phanerochaete chrysosporium pBluescript (Ecol Phanerochaete chrysosporium cDNA clone PchrSEQ004644, mRNA Concordia University 7141 Sherbrooke Street West, SP545-1, Montreal, Tel: 514 848 2424 3405 Contact: Tsang A Centre for Structural and Functional Genomics Eukaryota, Fungi, Basidiomycota, Hymenomycetes, aphyllophorales, Corticiaceae, Phanerochaete. ĊŢĊĊŢĠĊŖŖŔĊŖĊĊŖĠŢĠŖĠĊŔŢĠŢĠĊĊŢŢĊŖŖŔĊŖĊŖĠŖĊŖŖĸĊŢĊŖĠŔĊŖĊŢĊŔĊŢ 526 CGAGAGAGAGAGAGAGAGAGAGAGAGAGA tsang@vax2.concordia.ca organism="Phanerochaete chrysosporium"/ and Butler,G. tags from Phanerochaete chrysosporium cDNA Score 45.6; DB 11; pred. No. 0.055; 0; Mismatches 29; 675 bp 494 mRNA Indels linear Homobasidiomycetes; QC H4B1R6, Canada EST 22-NOV-2005 0 (EcoRI-XhoI) 0

```
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 9
DW344263
                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                   Matches
                                                                                    Best Local Similarity
                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ocal Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119 TCTGACCATGGCAGACCCTACGAAAGCCGAGACGGAGGCCGTCTTCAAGGTTCTGAAGG 177
                                385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                   81,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DW344263
DW344263.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1019 bp mRNA line
PP_LBC0018L04f Peach shoot Prunus persica cDNA
PP_LBC0018L04f, mRNA sequence.
DW344563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; eurosids I; Rosales; Rosaceae; Amygdaloideae; Prunus.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 864 656 3060
Fax: 864 656 6879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Abbott,A., Zhebentyayeva,T., Main,D., Jung,S., Jesudurai,C. and Wing,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                                                                                                                                                                Total High Quality bases = 801
Seq primer: TAATACGACTCACTATAGGG
High quality sequence stop: 1019
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                       Email: aalbert@clemson.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          122 Long Hall, Clemson University,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Clemson University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peach Model Genome for Rosaceae Shoot Unpublished (2006)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prunus persica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Prunus persica (peach)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGCTCTCTCGATACTCTACTCTACCCATCTAT 118
                  CCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCAC
CTCACTANAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGATGCTTTGGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 1019)
                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genetics and Biochemistry
                                                                                                                                                                                                                       /organism="Prunus persica"
/mol type="mRNA"
/culTivar="Loring"
/db xref="caxon:3760"
/clone="PP_LEC0018L04f"
/tissue_type="Shoot"
                                                                                                                                                   /lab_host="E. coli"
/clone_lib="Peach shoot"
/note="Vector: pBluescript
Site_2: XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="Vector: pBluescript KG+; Site_1: XhoI; Site_2: EcoRI; ded, double-stranded cDNA. The EcoRI-XhoI-digested cDNA was ligated with EcoRI-XhoI-digested pBluescript KS+ (Invitrogen Corp). "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone_lib="Phanerochaete chrysosporium pBluescript
(EcoRI-XhoI)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="PchrSEQ004644"
/lab_host="E. coli"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               db_xref="taxon:5306"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GI:84630653
                                                                                7.2%;
57.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                 0; Mismatches
                                                                                  Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 45.4; DB Pred. No. 0.065; Mismatches
                                                                                    0.095;
                                                                                                    DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Clemson,
                                                                                                                                                                        II SK(-);
                                                               61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46;
                                                                                                  Length 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                        Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29634,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Staton, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 09-JAN-2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                 0
                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               449
                               444
812
                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

SOURCE

S В á ORIGIN

밁 S ORIGIN

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
AG403694
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
밁
                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
PUBMED
                                                                                           Query Match
Best Local
                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             445
 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence.
AG403694
                                                                          49;
                                                                                                                                                                                                                                                                                                                                                         Vector
R.Site 1
R.Site 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC); and Chemical Research (Pixtumi-ku, Yokohama, Kanagawa, 230-0045, Japan (B-mail:hattoriegsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170)
Clones are derived from the mouse BAC library MSMg01. For BAC Clones are derived from the mouse BAC library MSMg01.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        library availability, please contact Kuniya Abe Tsukuba Institude, Bio Resource Center, The Institute of Physical and Chemical Research Koyadai, Tsukuba, 305-0074 Japan phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contribution of Asian mouse subspecies Mus musculus molossinus genomic constitution of strain C57BL/6J, as defined by BAC-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Abe,K., Noguchi,H., Tagawa,K., Yuzuriha,M., Toyoda,A., I
Ezawa,K., Saitou,N., Hattori,M., Sakaki,Y., Moriwaki,K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus molossinus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AG403694.1
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus molossinus DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hattori,M., Toyoda
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shiroishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AG403694
                                                                                                                                                                                                                                                                                                                                                                                                                               Sequencing : TJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence-SNP analysis
                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        e-mail: abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15574823
                                                                                                                                                                                                                                                                                                                                                                                                                 IBRARY
                     GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACC 445
 CATAAAGCTAGATCAACAACAA 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTG 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGGAGGGTTGGTGAACCGCAA 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTTGTCTTTGTCCTTTAAGACACTTACAAATTTACCTGTGGTTCCATGAATTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 771)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     musculus molossinus (Japanese wild
                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Res. 14 (12),
                                                                                                                                                                                                                                            /organism="Mus musculus molossinus"
/mol_type="genomic DNA"
/mol_type="genomic DSSinus"
/mol_type="molossinus"
/mol_type="molossinus"
                                                                                                                                                               /tissue_type="mixture of
/clone_lib="MSMg01 Mouse
                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                        clone="MSMg01-261E01.TJ"
                                                                                                                                                                                                          sex="male"
                                                                                                                                                                                                                                                                                                                                                                            : pBACe3.6
: EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Toyoda, A., Noguchi, H., Kojima, T. and Sakaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:48046380
                                                                                                                                                                                                                                                                                                                                                           ECORI.
                                                                                         7.2%;
87.5%;
                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2439-2447 (2004)
                                                                                         Score 44.8; D
Pred. No. 0.1;
                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone:MSMg01-261E01.TJ,
                                                                                                                                                                     kidney and spleen"
Male BAC Library"
                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                          7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mouse)
                                                                                                             Length 771;
                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (RIKEN) 3-1-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (abe@rtc.riken.jp)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSS 21-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genomic survey
                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kojima, T., and
                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              872
                                                                          0
```

ndI

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
DT234659/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
В
                                          8
                                                                                                            밁
                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                               Query Match
Best Local S
Matches 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DT234659

JGI_CAAT8286.rev CAAT Pimephales promelas brain 7-8 month ac males and females pooled (M) Pimephales promelas cDNA clone chat8286 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished (2005)
Other ESTS: JGI CAAT8286.fwd
Contact: Lindquist, E.A., Richardson, P.
DOE Joint Genome Institute
2800 Mitchell Drive, Walnut Creek, CA 94598, USA
Tel: 925 296 5600
Fax: 925 296 5710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; En
Actinopterygii; Neopterygii; Teleostei; Ostariophysi;
Cypriniformes; Cyprinidae; Pimephales.
1 (bases 1 to 778)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cDNA Library Preparation: DOE Joint Genome Institute:
http://www.jgi.doe.gov
http://www.jgi.doe.gov
NNA Sequencing: DOE Joint Genome Institute: http://www.jgi.doe.gov
NNA Sequencing: DOE Joint Genome Institute: http://www.jgi.doe.gov
Naming Conventions: EST name is generated by the concatenation of
the JGI Clone Id and the direction of sequencing. The suffix '.rev'
the JGI Clone Id and the direction of sequencing. The suffix '.rev'
indicates a reverse sequencing read of the insert. It does not
necessarily reflect the orientation of the insert.
necessarily reflect the orientation of the insert.
sequence of a run of 14 or more T residues
poly-A: Based upon the presence of a run of 14 or more T residues
poly-A: Based upon the sequence, this clone was polyadenylated.
The resulting poly-T sequence has been removed.

Plate: CART 0085 row: k column: 8
High quality sequence stop: 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Richardson, P., Lucas, S., Rokhsar, D., Detter, J.C., Ng, D.C., Brokstein, P. and Lindquist, B.A.

DOB Joint Genome Institute Pimephales promelas EST project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DT234659
DT234659.1 GI:73504794
                                                                                                                                                                         345 ТОЗОБАЛАЯССЭЛСЛАВАСССАСЛАЛАЯСЭТСЯВАТСТСАТСССАССЯДЯДЯДЯДЯДЯДЯДЯ 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: cdna@jgi-psf.org
                                                                                                                                                                                                                                        67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mephales promelas
                                                                                                                  AGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGT 448
                                                                                                                                                                                                                                  7.2%;
nilarity 64.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 e: CAAT 0085 row: k co
quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                       /organism="Pimephales promelas"
/mol type="marNA"
/mol type="marNA"
/db xref="taxon:90988"
/clone="CANT8286"
/tissue type="brain"
/tissue type="brain"
/tissue type="brain"
/tissue type="brain"
/clone Tib="CAAT Pimephales promelas brain 7-8 month
/clone Tib="CAAT Pimephales pooled (M)"
adults, males and females pooled (M)"
adults, males and females pooled (M)"
adults, males and females pooled (M)"
primed cDNA and cloned into Invitrogen vector pcWVsport6.
primed cDNA and cloned into Invitrogen vector pcWVsport6.
poly A RNA were primed with an oligo dT primer (5'-
poly A RNA were primed with an oligo dT primer (5'-
poly A RNA were primed with an oligo dT primer (5'-
poly A RNA were primed with an oligo dT primer (5'-
poly A RNA were primed with NotI. cDNA was size
cGAACGCGTGGG) and digested with NotI. cDNA was size
selected using 1.1% agarose gel electrophoresis (L
-0.5-1.2k, M -1.2-2.5k, H ->2.5k) then ligated into NotI
and SalI digested pcMVsport6 vector. The work was done at
DOE Joint Genome Institute."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 promelas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ocation/Qualifiers
                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                       Score 44.8; Di
Pred. No. 0.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    778 bp
                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         p mRNA linear EST 17
les promelas brain 7-8 month
                                                                                                                                                                                                                                                                                                           멂
                                                                                                                                                                                                                                                 37;
                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST 17-AUG-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                          0
```

```
RESULT 12
BZ708983/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                            RESULT 13
BZ306338
LOCUS
                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                        皮
                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                 REFERENCE
AUTHORS
                                                                                                                                                             KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                              VERSION
                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
TITLE
JOURNAL
                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                          306
                                                                                                                                                                                                                                                                                                                                                                  Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T., Resnick, A., Fraser, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T., Citek, R.W., Nunberg, A., Robbins, D. and Lakey, N. Consortium for Maize Genomics Unpublished (2002) Other GSSs: OGEAW43TC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         genomic survey sequence.
BZ708983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OGEAW43TM ZM_0.7_1.5_KB Zea m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, PACCAD clade, Panicoideae, Andropogoneae, Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BZ708983.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9712 Medical Center Drive, Rockville,
Tel: 301-838-5843
Fax: 301-838-0208
Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Class: methylation filtered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seq primer: TR
                                                                                                                                                Zea mays
Zea mays
                                                                                                                                                                                                                 BZ306338
hx41a10.bl WGS-ZmaysF
genomic clone hx41a10
BZ306338
1 (bases 1 to 543)
Rabinowicz,P.D., O'Shaughnessy,A.L., Balija,V., Dedhia,N.,
Katzenburger,F., King,L., Miller,B., Muller,S., Nascimento,L.,
Zutavern,T., McCombie,W.R. and Martienssen,R.A.
Genomic shotgun sequences from Zea mays (methyl-filtered)
Unpublished (2002)
                                                                                              Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                BZ306338.1
                                                                                                                                                                                                                                                                                                                                                                                                          ĊĠŦŢĠŦŦĠŦĸŤĠŢĊŦŦĸŦĸŦĸŦĸĊŦĊĠŦĠĊĸĸĸĬĸĸŦĠĸŦĠŦĸŦĠĸĸĊĠŔĊĠĠĊŦĠĠĊŦĊ
                                                                                                                                                                                                                                                                                                                                                                                                                                     CGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCC
                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="ZMMBMa0220H13"
/clone lib="ZM 0.7 1.5_KB"
/note="Vector: pBCSK-; Site_1: HincII; 0.7-1.
methylation filtered genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Zea mays"
/mol_type="genomic DNA"
/strain="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7.1%;
61.7%;
                                                                                                                                                                                                     GI:24659045
                                                                                                                                                                                                                              543 bp DNA linear GSS 06-NOV-2002 (JM107 adapted methyl filtered) Zea mays 5', genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 44.6; DB 12;
Pred. No. 0.097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genomic clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ear GSS 19-FEB-2003
ZMMBMa0220H13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                             212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

٠,,

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
BH873693/c
                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                   Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     588 bp DNA linear GSS 05-AUG-
hp46c12.g1 WGS-ZmaysF (JM107 adapted methyl filtered) Zea mays
genomic clone hp46c12 5', genomic survey sequence.
BH873693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: mccombie@cshl.org
Plate: hx41 row: a colu
Seq primer: -21M13UnivFwd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lita Annenberg Hazen Genome Sequencing Center Cold Spring Harbor Laboratory PO Box 100, Cold Spring Harbor, NY 11724, USA Tel: 516 367 8884 Fax: 516 367 8874
                                     Email: mccombie@cshl.org
Plate: hp46 row: c colu
Seq primer: -21M13UnivFwd
                                                                                               PO Box 100, Cold :
Tel: 516 367 8884
Fax: 516 367 8874
                                                                                                                                       Lita Annenberg Hazen Genome Sequencing Center Cold Spring Harbor Laboratory PO Box 100, Cold Spring Harbor, NY 11724, USA
                                                                                                                                                                                                                                                                   Rabinowicz, P.D., O'Shaughnessy, A.L., Balija, V., Dedhia, N., Katzenburger, F., King, L., Miller, B., Muller, S., Nascimento Zutavern, T., McCombie, W.R. and Martienssen, R.A.
High quality sequence stop: 588.
                 Class: shotgun
                                                                                                                                                                                                        Unpublished (2002) Contact: W. Richard McCombie
                                                                                                                                                                                                                                               Genomic shotgun sequences from
                                                                                                                                                                                                                                                                                                                                                                                                                     Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BH873693.1 GI:22109590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Class: shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: W. Richard McCombie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGTATTTCTCTCACTTCCATAAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCC 365
                                                                                                                                                                                                                                                                                                                                (bases 1 to 588)
                                                                                                                                                                                                                                                                                                                                                                                                                                           mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone lib="WGS-GnaysF (JM107 adapted methyl filtered)"
/note="Organ: immature ears; Site 1: Xba I; Site 2: Xba I;
The vector was digested with XbaI and one nucleoTide was added by fill in in the recessive 3' end. The genomic DNA was nebulized, end repaired, adaptor ligated and size fractionated using sephadex. The resulting fragments were between 0.8 and 3 kb and were cloned into the vector (.x/y reads in MJ3mp19, .b/g reads in pUC19). The same ligation was transformed in either JM107 or DH5a. "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lab_host="JM107 or DH5a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'mol_type="genomic DNA"
'cultivar="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                lone="hx41a10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61.7%;
                                                               column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 44.6; DB 11;
Pred. No. 0.11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               543.
                                                                                                                                                                                                                                                 Zea mays (methyl-filtered)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                           Nascimento,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
```

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
CC693540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
ORIGIN
                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 306 CGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCC 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71;
                                                                                                                                                                                                                                                                                                                                                    Unpublished (2002)
Other_GSSs: OGWFD96TH
                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 669)
Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T.,
Resnick, A., Fraser, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T.,
Citek, R.W., Numberg, A., Robbins, D. and Lakey, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OGWFD96TV ZM 0.7 1.5 KB Zea mays genomic clone genomic survey sequence. CC693540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GSS.
                                                                                                                                                                                                                                                       Tel: 301-838-5843
Fax: 301-838-0208
                                                                                                                                                                                                                                                                                                                                                                                         Consortium for Maize Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CC693540.j
                                                                                                                                                                                                       Class: methylation filtered
                                                                                                                                                                                                                                        Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                  Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          primer:
                                                                                                                                                                                                                                                                                                Medical Center Drive,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone lib="WGS-ZmaysF (JM107 adapted methyl filtered)"
/note="Organ: immature ears; Site 1: Xba I; Site 2: Xba I;
The vector was digested with XbaI and one nucleotide was added by fill in in the recessive 3' end. The genomic DNA was nebulized, end repaired, adaptor ligated and size fractionated using sephadex. The resulting fragments were between 0.8 and 3 kb and were cloned into the vector (.x/y reads in M13mp19, .b/g reads in pUC19). The same ligation was transformed in either JM107 or DH5a. "
               /clone="ZMMBMa0564024"
/clone | lib="ZM_0.7_1.5 KB"
/note="Vettor: pBCSK-; Site 1:
methylation filtered genomic DN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                        /organism="Zea mays"
/mol_type="genomic DNA"
/strain="B73"
                                                                                                                                                                  1. .669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="hp46c12"
/lab_host="JM107 or DH5a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="genomic DNA"
/cultivar="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Zea mays"
                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     db_xref="taxon:4577"
                                                                                        db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:32098316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7.1%;
61.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 44.6; DB Pred. No. 0.11; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           669
                                                                                                                                                                                                                                                                                                Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Å,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                  3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44;
                     DNA
                   HincII; 0.7-1.5 kb
NA library"
                                                                                                                                                                                                                                                                                                  20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 588;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ear GSS 19-JUN-2003
ZMMBMa0564O24,
                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

Query Match

7.1%;

Score 44.6;

DB 12;

Length 669;

Search completed: Novem Job time : 2032.12 secs	Db .51:	0у 366	Db 451	Qу 306	Best Local Matches 7
Search completed: November 1, 2006, 07:01:22 Job time : 2032.12 secs	.511 ACGGCACCTTGATCCTGATATGCCGAGAGAGAGAGAGAGA	366 ACAAARGGTCAGATGTCATCCCACGAGAGAGAGAGAGAGAGAGAGA	451 CGTTGTTGTATGTCTTATATACTCGTGCAAATAATGATGTATGAAGGAAG	306 CGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGAAGCCAACCC 355	Best Local Similarity 61.7%; Pred. No. 0.11; Matches 71; Conservative 0; Mismatches 44; Indels 0; Gaps 0;

97208,

Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Seq

Sequence Sequence Sequence

98006

Sequence Sequence Sequence Sequence

Sequence Sequence Sequence

OM nucleic

6

Run

Sequence:

Title:

Searched:

Database

o N

Result

22210 22210 2333

```
GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cgaattrircrctrtraggraagtaaccaatgatgcgccatgtrgacaaaaggcrgatra 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGAGCCATTTAATTTCGAGACACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCTAAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 113, Application US/09598401C

| Sequence 113, Application US/09598401C
| Patent No. 65696325
| GENERAL INPORMATION:
| APPLICANT: Perera, J. Ranjan
| APPLICANT: Bagleton, Clare
| APPLICANT: Bagleton, Clare
| APPLICANT: Alce, Stephen J.
| TITLE OF INVENTION: Modification of Gene Expression
| TITLE OF INVENTION: Modification of Gene Expression
| FILE REFERENCE: 11000.1036c2
| CURRENT APPLICATION NUMBER: US/09/598,401C
| CURRENT APPLICATION NUMBER: US. No. 6596925 60/146,591
| PRIOR FILING DATE: 1999-07-30
| PRIOR FILING DATE: 1999-07-30
| PRIOR FILING DATE: 1999-07-30
| PRIOR FILING DATE: 1999-03-25
| NUMBER OF SEQ ID NOS: 120
| SOFTWARE: FastSEQ for Windows Version 4.0
| SEQ ID NO 113
| LENGTH: 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Score 625; DB 3; L; Pred. No. 4.7e-198; 0; Mismatches 0;
                                                                      US-09-949-016-96411

US-09-949-016-96675

US-09-949-016-96677

US-09-949-016-96677

US-09-949-016-96941

US-09-949-016-96943

US-09-949-016-97208

US-09-949-016-97209

US-09-949-016-97474

US-09-949-016-97474
                                                                                                                                                                                                                                                                                                                                              -09-949-016-97740
-09-949-016-97741
                                                                                                                                                                                                                                                                                                                                                                                    -09-949-016-98005
                                                                                                                                                                                                                                                                                                                                                                                                      US-09-949-016-98006
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
CRGANISM: Eucalyptus grandis
US-09-598-401C-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 100.
Matches 625; Conservative
22830
6830
66011
66011
66011
66011
66011
66011
66011
66011
66011
Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1199
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107, App
107, App
24, Appl
24, Appl
24, Appl
106, App
                                                                                                                                                      (without alignments)
10067.438 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12697, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27637,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                  October 31, 2006, 23:41:44 ; Search time 116.161 Seconds
                                                                                                                                                                                                                                                    625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEMC_Celerra_SIDS3/ptodata/2/ina/1_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/5_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/6_A_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/6_B_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PP_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PP_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PP_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PP_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PP_COMB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/ina/PP_COMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /BMC_Celerra_SIDS3/ptodata/2/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                625
1 ctgagccatttaattcgaga......tttgctcgagtctcgcggaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                    GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-598-401C-113
US-09-276-599-12
US-09-598-401C-60
US-09-598-401C-60
US-09-615-192A-107
US-09-169-789-107
US-09-615-192A-24
US-09-615-192A-24
US-09-615-192A-24
US-09-615-192A-24
US-09-615-192A-106
US-09-949-016-12273
US-09-949-016-12273
US-09-949-016-1329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-17329
US-09-949-016-14273
US-09-949-016-14077
                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                          US-10-702-319A-113_COPY_1019_1643
                                                                                                                                                                                                                                                                                                                                                  1403666 seqs, 935554401 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                            nucleic search, using sw model
                                                                                                                                                                                                                                                                                          IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Issued Patents NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .6 407
.6 407
.5 130563
.5 131379
.3 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14037
14037
72604
72604
237510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          458
1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36317
36322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2830
                                      Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          606.2
606.2
606.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                  Perfect score:
```

1078

9

120

180

0

Gaps

ö

Length 3070; Indels

```
121 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                        1 CIGAGCCATITAATICGAGACATGCCCGAAAITATICTICTIGTIGCCATAACTGT
                                                                                                                                                                                                                                                                                  4; Gaps
                                                                                                                                          361 AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                        ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACGGCAAAGTTCCTATA
                                                                                                                                                                                                                                                   ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                            AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG
             301 AACTCCGTATTTCTCTCATTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Perera, J. Ranjan
APPLICANT: Rade, Stephen J.
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: MODIFIE: 1090-5036c2
CURRENT APPLICATION NUMBER: U.S. No. 6596925 60/146,591
PRIOR FILING DATE: 1999-07-30
PRIOR PILING DATE: 2000-062-24
PRIOR PILING DATE: 2000-062-24
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09/276,599
PRIOR PILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 120
SEQ ID NO 12
LENGTH: 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
97.0%; Score 606.2; DB 3;
Best Local Similarity 98.9%; Pred. No. 3.9e-192;
Matches 622; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                     US-09-598-401C-12
; Sequence 12, Application US/09598401C
; Patent No. 6596925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: EUC.
US-09-598-401C-12
                                                                                                                                                                                                                                                 477
                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                    417
                                                                                                                                                                                                                         421
                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                           S G
                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                       g
                                                                                                                                                                                                    8 8
                                                                                                       8 8
                                                                                                                                              ð
                                                                        셤
                              셤
                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                           1498
                                                                                                                                                                                                                                540
                                                                                                                                                                     480
                                                                                                                       420
                                                                                                                                                                                                                                                                 600
                                                                       301 AACTCCGTATTTCTCTCACTTCCATAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CTGAGCCATTIAATTCGAGAGACATGGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                       TTTCTCTCTATATTCTCGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                  481 ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                4 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Rice, Stephen J.
APPLICANT: Rice, Stephen J.
TITLE OF INVENTION: Composition and methods for the TITLE OF INVENTION: modification of gene expression FILE REFERENCE: 11000.1036
CURRENT APPLICATION NUMBER: US/09/276,599
CURRENT PILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 21
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1:
LENGTH: 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
97.0%; Score 606.2; DB 3;
Best Local Similarity 98.9%; Pred. No. 3.9e-192;
Matches 622; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                TTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 12, Application US/09276599
Patent No. 6380459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION: (1)...(654)
NAME/KEY: TATA signal
LOCATION: (537)...(543)
NAME/KEY: CAAT signal
LOCATION: (499)...(502)
US-09-276-599-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: 5'UTR
                                                                                                                                                                                                                                                                                                                                                                                              US-09-276-599-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                   1499
                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                 1559
                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                               421
                                                           1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                              ઠે
                                                                                                                                                                                                  g
                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                        δ
                                                                                                    셤
                                                                                                                                 ò
                                                                                                                                                   a
                                                                                                                                                                                                                     ⋩
                                        8 6
                                                                                  ઠ
```

900

596

416 420 476 480 536

300 360

300

ij

9

g

ઠે

8 &

ò a ઠે g Š 유 ઠે g ठ

```
ö
                                                                                                                    240
                                                                                                                                      281 ATCATCACCAGATCGGCCAGTAAAGGGTAATATAAATTTAACAAATAGCTCTTGTACCGGG 340
                                                                                                                                                                                                                                                                                                                                                     416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                             220
                                                                                                                                                                                              ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACAAATAGCTCTTGTACCGGG 300
                                                                                                                                                                                                                                                                           301 AACTCCGTATTTCTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                460
                                                                                                                                                                                                                                                                                                                                                                                                                                  476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA 536
  CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361 AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                       417 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGATGT
                                          GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                  AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            583 CCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGTTTTATTTCTCTCTCTTCCTTTGCTCGAGTCTCGCGGAA 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 107, Application US/09615192A

Sequence 107, Application US/09615192A

Sequence 107, Application US/09615192A

GENERAL INFORMATION:
APPLICANT: Blokaberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Madification of Plant Lignin Cont
FILE OF INVENTION: Modification of Plant Lignin Cont
CURRENT APPLICATION NUMBER: US/09/615,192A

CURRENT FILING DATE: 1997-11-21

PRIOR FILING DATE: 1997-11-21

PRIOR FILING DATE: 1996-09-11

PRIOR APPLICATION NUMBER: US 08/713,000

PRIOR FILING DATE: 1998-10-09

NUMBER OF SEQ ID NOS: 405

SECTION NO 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 6.9%; Score 43; DB 3; I Best Local Similarity 100.0%; Pred. No. 0.0013; Matches 43; Conservative 0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CIGCITICCITIGCICGAGICTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              crecirirccirirecreadricidedala 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: DNA; CRGANISM: Eucalyptus grandis
US-09-615-192A-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1630
    101
                                        121
                                                                             161
                                                                                                                    181
                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                641
                            8
                                                                     셤
                                                                                                                    ð
                                                                                                                                                 g
                                                                                                                                                                                         ò
                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG 240
                                                                                                                                                                 AACTCCGTATTTCTCTCACATACCCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                              AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATATTGGTGTAGGGTCCAATATTTTGCGGAAGGGTTGGTGGAACCGCAAAGTTCCTATA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAATTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 120
                                                                                                                                        ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 300
                                                                                                                                                                                                                    AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                           AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 606.2; DB 3; Length 2096; Pred. No. 7.4e-192; 0; Mismatches 3; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 60, Application US/09598401C

Fatent No. 6596925

GENERAL INFORMATION:
APPLICANT: Bagleton, Clare
APPLICANT: Bagleton, Clare
APPLICANT: Rice, Stephen J.
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c2
CURRENT APPLICATION NUMBER: US/09/598,401C
CURRENT PILING DATE: 2000-06-20
FRIOR APPLICATION NUMBER: U.S. No. 6596925 60/146,591
FRIOR FILING DATE: 1999-07-30
FRIOR FILING DATE: 1999-07-30
FRIOR FILING DATE: 1999-07-30
FRIOR FILING DATE: 1999-07-30
FRIOR FILING DATE: 1999-07-30
FRIOR FILING DATE: 1999-07-30
FRIOR PRING DATE: 1999-07-30
FRIOR APPLICATION NUMBER: PCT/NZ00/00018
FRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 120
SOFTWARE: FRRESQ for Windows Version 4.0
SEQ ID NO 60
LENGTH: 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         crectrirccirricciceaercreeceaa 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 98.9%;
Matches 622; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
US-09-598-401C-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: EUC8
US-09-598-401C-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                       477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                      121
                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                           417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                           181
                                                                                                                                      241
                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         501
```

셤

ઠે

g

Š

ઠે

Gaps

ö

```
US-09-169-789-24

US-09-169-789-24

Sequence 24, Application US/09169789

Sequence 24, Application US/09169789

Batent No. 6653528

GENERAL INFORMATION:

APPLICANT: Bloksberg, Leonard N.

APPLICANT: Haukkala, likka

TITLE OF INVENTION: Materials and Methods for the

TITLE OF INVENTION: Modification of Plant Lignin Content

FILE REFERENCE: 11000.1003-2

CURRENT APPLICATION NUMBER: US/09/169,789

CURRENT PILING DATE: 1998-10-09

EARLIER PILING DATE: 1996-10-09

EARLIER PILING DATE: 1996-09-11

NUMBER OF SEQ ID NOS: 185

SOFTWARE: FastSEQ for Windows Version 3.0

SEQ ID NO 24

LENGTH: 411

THOUSE THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND THE TELLIAND TH
                                                                                                                                                                                                                                         Query Match
6.7%; Score 41.8; DB 2; Length 421;
Best Local Similarity 95.6%; Pred. No. 0.0016;
Matches 43; Conservative 0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: BLOKSberg, Leonard N.
APPLICANT: BLOKSberg, Leonard N.
APPLICANT: Havukkala, 11kka
TITLE OF INVENTION: Maderials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content;
TITLE OF INVENTION: Modification of Plant Lignin Content;
TITLE OF INVENTION: MOGISTAL 20/09/615,192A
CURRENT APPLICATION NUMBER: US 08/975,316
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR PILING DATE: 1996-09-11
PRIOR PLILING DATE: 1996-09-11
PRIOR PLILING DATE: 1996-09-11
PRIOR PLILING DATE: 1996-09-11
PRIOR PLILING DATE: 1996-09-11
SPRIOR PLILING DATE: 1998-10-09
NUMBER OF SEQ ID NOS: 405
SOFTWARE: PASTSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 581 ATCCGITITALTICCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 41.8; DB 3; Length 4; Pred. No. 0.0016; 0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13 AGCCGTTTTATTTCTTCTTGATTTCCTTTGCTCGAGTCTCGCGGAA 57
                                                                                                                                                                                                                                                                                                                                                                                                                        13 AGCCGTTTATTTCCTCTGATTTCCTTTGCTCGGGAGTCTCGCGGAA 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-615-192A-24
; Sequence 24, Application US/09615192A
; Patent No. 6410718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 95.6%;
Matches 43; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
CRGANISM: Eucalyptus grandis
US-09-169-789-24
; TYPE: nucleic acid
; STRANDENESS: single
; FOPOLOGY: linear
US-08-975-316-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-615-192A-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 24, Application US/08975316

Septent No. 5952486

GENERAL INFORMATION:
APPLICANT: BLOKEBERG, Leonard N., HAVUKKALA, 11kka
APPLICANT: BLOKEBERG, Leonard N., HAVUKKALA, 11kka
APPLICANT: BLOKEBERSON, Alastair W.
TITLE OF INVENTION: MATERIALS AND METHODS FOR
TITLE OF INVENTION: THE MODIFICATION OF PLANT LIGNIN CONTENT
NUMBER OF SEQUENCES. 88
CORRESPONDENCE ADDRESS:
ADDRESSES:
ADDRESSES:
LAW Offices of Ann W. Speckman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 6.9%; Score 43; DB 3; Length 1630; Best Local Similarity 100.0%; Pred. No. 0.0013; Matches 43; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                       Sequence 107, Application US/09169789
Sequence 107, Application US/09169789
Patent No. 6653528
GENERAL INFORMATION:
APPLICANT: BIOKSDERY, Leonard N.
APPLICANT: BIOKSDERY, Leonard N.
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Maderials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content;
TITLE OF INVENTION: MODISICATION OF PLOST
CURRENT APPLICATION NUMBER: US/09/169,789
CURRENT FILING DATE: 1998-10-09
EARLIER FILING DATE: 1997-11-21
EARLIER FILING DATE: 1997-11-21
EARLIER FILING DATE: 1996-09-11
NUMBER OF SEQ ID NOS: 185
SOFTWARE: FESESEE for Windows Version 3.0
SEQ ID NO 107
LENGTH: 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           583 CCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ccerrirarriccicideriricciridericascicidedas 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
OPERATING SYSTEM: DOS
SOFTWARE: FRACSO for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/975,316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: Law Offices of Ann W. Speckman STREET: 2601 Bliott Avenue, Suite 4185 STATE: WA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/713,000
FILING DATE: September 11, 1996
ATTORNEY/AGENT INFORMATION:
NAME: SLEATH, Janet 37,007
REGISTRATION NUMBER: 37,007
REGISTRATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPAK: 206-269-0563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM: Bucalyptus grandis US-09-169-789-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEX:
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-975-316-24
                                                                                                                                                     RESULT 6
US-09-169-789-107
```

ò

ö

Gaps

ö

셤

ð

```
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
CETAIG et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF;
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF;
CURRENT FILING DATE: 2000-04-14
FRIOR PELLING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/231,768
PRIOR FILING DATE: 2000-10-03
PRIOR PILING DATE: 2000-10-03
PRIOR FILING DATE: 2000-09-08
NUMBER: OF SEQ ID NOS: 207012
SOFTWARE: PRAESEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                               FERENT NO. SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SELISAS SEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 6.5%; Score 40.6; DB 3; Length 130563; Best Local Similarity 73.2%; Pred. No. 0.095; Matches 52; Conservative 0; Mismatches 19; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 40.6; DB 3; Length 131379;
Pred. No. 0.096;
0; Mismatches 19; Indels 0;
                                                                                       43
                                                                                                                                                                                                                                                                                                       Sequence 12273, Application US/09949016
Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 16050, Application US/09949016
Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 73.2%;
Matches 52; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118234 GAGAGAGAGAG 118224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              410 GAGAGAGAGAG 420
583 CCGTTTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-949-016-16050/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-949-016-16050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-949-016-12273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
    ሯ
                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 6.6%; Score 41.4; DB 3; Length 407; Best Local Similarity 97.7%; Pred. No. 0.0021; Matches 42; Conservative 0; Mismatches 1; Indels C
                                      Score 41.8; DB 3; Length 421; Pred. No. 0.0016; 0; Mismatches 2; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 41.4; DB 3; Length 407;
Pred. No. 0.0021;
0; Mismatches 1; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KESULT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT IN CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT CARLOTT C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Materials and Methods for the TITLE OF INVENTION: Madification of Plant Lignin Content; FILE REFERENCE: 11000.1003.02.

CURRENT APPLICATION NUMBER: US/09/169,789

CURRENT FILING DATE: 1998-10-09

EARLIER FILING DATE: 1998-11-21

EARLIER FILING DATE: 1997-11-21

EARLIER FILING DATE: 1996-09-11

NUMBER OF SEQ ID NOS: 185

SOFTWARE: FastSEQ for Windows Version 3.0

SEQ ID NO 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          583 CCGTTTTATTTCCTCTGCTTTCCTTTGCTCCAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CCGTTTTATTTCCTCTGATTTCCTTTGCTCGAGTCTCGCGGAA 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 106, Application US/09169789 Patent No. 6653528 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Bloksberg, Leonard N. APPLICANT: Havukkala, Ilkka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 6.6%;
Best Local Similarity 97.7%;
Matches 42; Conservative (
                                           Query Match
Best Local Similarity 95.6%;
Matches 43; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-09-169-789-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-615-192A-106
```

ઠ

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            391 AGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        391 AGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 125 AGAGAAAGAGAGAGAGAGAGAGAGAGAGATATTAATTTAGAAAATAAGTGTCACTTTTTG 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 11960, Application US/09270767

Sequence 11960, Application US/09270767

Patent No. 6703491

GENERAL INFORMATION:
APPLICANT: Homburger et al.
TITLE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster
TITLE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster
FILE REFERENCE: File Reference: 7326-094
CURRENT APPLICATION NUMBER: US/09/270,767

CURRENT FILING DATE: 1999-03-17

NUMBER OF SEQ ID NOS: 62517
                                                                                                                                                                                                           RESULT 14
US-09-270-767-27637/c
US-09-270-767
Sequence 27637, Application US/09270767
Sequence 27637, Application US/09270767
Sequence 2763491
GENERAL INFORMATION:
APPLICANT: Homburger et al.
TITLE OF INVENTION: Nucleic acids and proteins of Drosophila melanogaster.
TITLE REPREBRICE: File Reference: 7326-094
CURRENT APPLICATION NUMBER: US/09/270,767
CURRENT FILING DATE: 1999-03-17
NUMBER OF SEQ ID NOS: 62317
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 27637
LENGTH 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       451 GAGTCAATGGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65 drdgggartdggrdgrtaartaardargggggggggggaaaadaccaggar 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   451 GAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65 Grigggaringagridgripahtrahigiraggggggggggaaagaggggal 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match 6.3%; Score 39.6; DB 3; Length 1528;
Best Local Similarity 60.0%; Pred. No. 0.018;
Matches 66; Conservative 0; Mismatches 44; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
6.3%; Score 39.6; DB 3; Length 458;
Best Local Similarity 60.0%; Pred. No. 0.0092;
Matches 66; Conservative 0; Mismatches 44; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Search completed: November 1, 2006, 11:48:34
Job time : 116.161 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA CRCANISM: Drosophila melanogaster US-09-270-767-11960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: DNA
; ORGANISM: Drosophila melanogaster
US-09-270-767-27637
                                                                                                                                    118234 GAGAGAGAGAG 118224
                                                                                        410 GAGAGAGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 15
US-09-270-767-11960/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 11960
LENGTH: 1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                       g
                                                      셤
                                                                                                  ð
```

Sequence 711, App Sequence 656, App Sequence 656, App Sequence 107, App Sequence 24, Appl Sequence 173109, Sequence 173109, Sequence 173109, Sequence 1621, App Sequence 1621, App Sequence 21772, A Sequence 21772, A Sequence 21772, A Sequence 21772, A Sequence 21772, A Sequence 21772, A Sequence 21772, A Sequence 21772, A Sequence 21772, A Sequence 21772, A Sequence 21773, Appl Sequence 21773, Appl Sequence 21773, Appl Sequence 21773, Appl Sequence 21773, Appl Sequence 21773, Appl Sequence 21334, Appl Sequence 24865, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl Sequence 323, Appl

```
APPLICANT: Perera, Ranjan
APPLICANT: Race, Stephen
APPLICANT: Race, Stephen
APPLICANT: Radjacton, Clare
APPLICANT: Radjacton, Clare
APPLICANT: Ladham, Annette
APPLICANT: Ladham, Annette
APPLICANT: Wood, Marion
APPLICANT: Visear, Blizabeth
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
FILE REPERENCE: 11000.1036c4
CURRENT APPLICATION NUMBER: US./10/137,036
CURRENT APPLICATION NUMBER: US. No. US20030101478A1 09/724,624
PRIOR APPLICATION NUMBER: US. No. US20030101478A1 09/598,401
PRIOR FILING DATE: 2000-11-28
PRIOR FILING DATE: 2000-06-20
PRIOR PELICATION NUMBER: DCT/NZ00/00018
PRIOR FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: US. No. US20030101478A1 09/276,599
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 100.0%; Score 625; DB 6; Length 3070; Best Local Similarity 100.0%; Pred. No. 9.7e-188; Matches 625; Conservative 0; Mismatches 0; Indels 0
                                                                                                                                                                                                  US-10-174-693-24
US-10-174-693-24
US-10-087-192-1459
US-10-027-632-173109
US-10-087-192-1621
US-10-174-693-106
US-10-174-693-106
US-10-174-693-107
US-10-674-124A-21772
US-10-087-1172-107
US-10-087-11769
US-10-260-238-2334
US-10-260-238-2334
US-10-085-117-7
US-10-085-117-7
US-10-085-117-7
US-10-085-117-7
US-10-085-117-7
US-10-085-117-7
1 US-10-893-483-28

US-10-966-482-18

US-10-481-032A-711

US-10-481-032A-656

US-10-174-653-107

US-10-42-115-80646

US-10-087-192-205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-437-963-96920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 113, Application US/10137036
Publication No. US20030101478A1
GENERAL INFORMATION:
  7228
1951
2000
2000
2199
1630
563
493631
126192
                                                                                                                                                                                                                                                                                                                               407
24080
257
24879
176594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000
43412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100610
       US-10-137-036-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-137-036-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Published Applications NA Main:*

1: KBMC Celerra SID83/ptodata/2/pubpna/US07_PUBCOMB.seq:*
2: /BMC_Celerra=SID83/ptodata/2/pubpna/US08_PUBCOMB.seq:*
3: /EMC_Celerra=SID83/ptodata/2/pubpna/US09E_PUBCOMB.seq:*
4: KBMC_Celerra=SID83/ptodata/2/pubpna/US09E_PUBCOMB.seq:*
5: /EMC_Celerra=SID83/ptodata/2/pubpna/US09E_PUBCOMB.seq:*
6: /EMC_Celerra=SID83/ptodata/2/pubpna/US10E_PUBCOMB.seq:*
7: KBMC_Celerra=SID83/ptodata/2/pubpna/US10E_PUBCOMB.seq:*
8: /EMC_Celerra=SID83/ptodata/2/pubpna/US10E_PUBCOMB.seq:*
10: /EMC_Celerra=SID83/ptodata/2/pubpna/US10E_PUBCOMB.seq:*
11: /EMC_Celerra=SID83/ptodata/2/pubpna/US10E_PUBCOMB.seq:*
12: /EMC_Celerra=SID83/ptodata/2/pubpna/US10E_PUBCOMB.seq:*
13: /EMC_Celerra=SID83/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
14: /EMC_Celerra=SID83/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
14: /EMC_Celerra=SID83/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
15: /EMC_Celerra=SID83/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
16: /EMC_Celerra=SID83/ptodata/2/pubpna/US11A_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 12, Appl
Sequence 12, Appl
Sequence 12, Appl
Sequence 60, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Appli
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 113, App
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 19390,
                                                                                                                                                                             November 1, 2006, 11:25:56 ; Search time 799.58 Seconds (without alignments) 9604.757 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 113,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 60,
Sequence 60,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 113,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3, 1
Sequence 4, 1
Sequence 5, 1
Sequence 6, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                             US-10-702-319A-113_COPY_1019_1643
625
1 ctgagccatttaattcgaga......tttgctcgagtctcgcggaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                               GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-11-097-143-19390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-137-036-113

US-10-702-319A-113

0 US-10-927-641-113

US-10-137-036-12

US-10-137-036-12

0 US-10-27-641-12

US-10-137-036-60

US-10-137-036-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10 US-10-927-641-60

8 US-10-703-091-1

8 US-10-703-091-2

8 US-10-703-091-4

8 US-10-703-091-4

8 US-10-703-091-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                           18892170 segs, 6143817638 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                 OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                IDENTITY NUC ** Gapon 10.0 , Gapon 10.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
2096
2096
2096
2096
534
485
306
293
```

Post-processing:

Database

Perfect score:

Run on:

Sequence:

Scoring table:

Searched:

ö

Gaps

ö

625 625 606.2 606.2 606.2 606.2 606.2 606.2 119 306.2 119 98 485 485 49.4 49.4

Score

. 8 Result

```
ATTGGTGTAGGGTCCAATATTTTGGGGAGGGTTGGTGAACCGGAAAGTTCCTATATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1499 ATTGGTGTAGGGTCCAATATTTGCGGGAGGGTTGGTGAACGCAAAGTTCCTATATAT
                                                                                                                                                                                                                                                                                                                                                      TTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTCCGTATTTCTCTCCATCCCTGATTAATTTTGGTGGGAAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                             ATCATCACCAGATCGGCCAGTAAGGGGTAATATTAACAAATAGGTCTTGTACCGGG
                                                                                                                                                                                                                            GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                  1139 GTATGATCTTGGAGTTGTTGGAGTAATTTGCAAGCTGACGATGGCCCTCAGGAAATT
                                                                                                                                                                                                                                                                                                                                         181 AAGGGGCAAACCCAGATTGGAAAAGAGCACAAAAGAGCACGAACCCAAACTTTCCTTAACAAG
                                                                                                                                                                                    CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                              Gaps
                                                                                                                                              ö
                                                                                                                 Length 3070;
                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 113, Application US/10927641

Sequence 113, Application US/20050244968A1

Publication No. US20050244968A1

GENERAL INFORMATION:

APPLICANT: Perers. Ranjan

APPLICANT: Rice, Stephen

APPLICANT: Labham, Annette

APPLICANT: Usser, Elizabeth

APPLICANT: Visser, Elizabeth

TITLE OF INVENTION: Compositions and Methods for the

TITLE OF INVENTION: Modification of Gene Expression

TITLE OF INVENTION: Modification of Gene Expression

FILE REFERENCE: 11000.1036c4
                                                                                                                  Query Match 100.0%; Score 625; DB 9; L
Best Local Similarity 100.0%; Pred. No. 9.7e-188;
Matches 625; Conservative. 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTCCTTTGCTCGAGTCTCGCGGAA 625
 PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 129
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 113
LENGTH: 3070
                                                                              , ORGANISM: Eucalyptus grandis
US-10-702-319A-113
DATE: 1999-03-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
US-10-927-641-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                    1079
                                                                                                                                                                                                                1019
                                                                                                                                                                                    Н
                                                                                                                                                                                                                                                                                                121
                                                                        TYPE: DNA ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                       8
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTCCTCTGC 600
                                                                                                                                                                                                                                                                                                                                                                                                   TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGACGAAGTACAT 480
                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                 1198
                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                        AACTCCGTATTTCTCTCCACTCCATAAACCCCTGATTAATTTGGTGGGAAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                    GIAIGAICTIGGAGITGITGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                               181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                   241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000-1036c5 S.
CURRENT APPLICATION NUMBER: U.S. No. 10/291,447
PRIOR FILING DATE: 2002-11-08
PRIOR FILING DATE: 2002-11-08
PRIOR APPLICATION NUMBER: U.S. No. 60/425,087
PRIOR APPLICATION NUMBER: U.S. No. 10/137,036
PRIOR APPLICATION NUMBER: U.S. No. 09/724,624
PRIOR PILING DATE: 2000-04-30
PRIOR FILING DATE: 2000-01-28
PRIOR FILING DATE: 2000-01-28
PRIOR FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 60/146,591
PRIOR FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 60/146,591
PRIOR FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 60/146,591
PRIOR APPLICATION NUMBER: U.S. No. 60/146,591
PRIOR FILING DATE: 1999-07-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCCTTTGCTCGAGTCTCGCGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
US-10-702-319A-113
Sequence 113, Application US/10702319A
; Sequence 113, Application No. US20050026162A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                       1379
                                                                                                                                                                                                                                                                                                                                                                                                                                            1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1499
                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                1319
                                                                                                                                                                                                                   1199
                                                                                                                                                                                                                                                                          1259
                                                                                                                                                                                                                                                                                                      301
                                                 1019
                                                                                                        1079
                                                                             61
                                                                                                                                   121
                      н
```

ద ò

g

g δ

g ò 엄 ð

ò g 8

g

8 ઠે g ò g δ

ò

1378

360

300

1138

120

ö

1198

240

1618

540

480

3

```
417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACAT 1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTCCGTATTTCTCTCACACTAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cgaattricicrititaggiaagtaaccaatgatgcgccargtrgacaaaaaggctgatta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTGGTGTATAGGGTCCAATATTTTGCGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACCICCACCACCATACCICACTICAATCCCCACCATTATCCGTTTTATTTCCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITICICICIATATICIGGIICACCGGIIGGAGICAAIGGCAIGCGIGAAIGIACAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATGATCTTGGAGTTGTTGGTGCAAATTTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACCCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
CURRENT FILING DATE: 2004-08-27
PRIOR APPLICATION NUMBER: PRIOR
PRIOR FILING DATE: 2002-04-30
PRIOR FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: PCT/NZ 01/00115
PRIOR APPLICATION NUMBER: PCT/NZ 01/00115
PRIOR FILING DATE: 2001-06-20
PRIOR APPLICATION NUMBER: U.S. No. 09/724,624
PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
PRIOR APPLICATION NUMBER: PCT/NZ00/00018
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 1900-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWARE: FRACEO for Windows Version 4.0
SEQ ID NO 113
LENGTH: 3070
                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 625; DB 10; Length 3070; 100.0%; Pred. No. 9.7e-188;
                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rrrccrrrccrccagrcrcccccaa 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITCCITIGCICGAGICICGCGGAA 625
                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                   US-10-927-641-113
                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 625;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
```

RESULT

```
240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421 AGAGTITITCICICIATATICIGGITCACCGGITGGAGTCAAIGGCAIGCGAGAGAIGI 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 ATCATCACCAGATCGGCCAGTAAGGTAATATATAACAAATAGCTCTTGTACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATATTGGTGTAGGGTCCAATATTTTGCGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 CGAATTITICICITITIAGGIAAGIAACCAAIGAIGCGCCAIGIIGACAAAAAGGCIGATIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 ATCATCACCAGATCGGCCAGTAAGGCTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301 AACTCCGTATTTCTCTCTCATTAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGITITICICICIATATICIGGITICACCGGITIGGAGICAATGCCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                             APPLICANT: POEMALIAN:
APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Eaglacon, Clare
APPLICANT: Eaglacon, Clare
APPLICANT: Eaglacon, Clare
APPLICANT: Eaglacon, Clare
APPLICANT: Uses, Slizabeth
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: MOMBER: 2002-04-30
FRICA PRICATION NUMBER: PCT/NZ 01/0315
PRIOR FILING DATE: 2000-11-28
PRIOR PELICATION NUMBER: U.S. No. US20030101478A1 09/598,401
PRIOR PELICATION NUMBER: U.S. No. US20030101478A1 09/598,401
PRIOR PELICATION NUMBER: CT/NZ00/00018
PRIOR PELICATION NUMBER: U.S. No. US20030101478A1 09/276,599
PRIOR PELING DATE: 1999-03-24
PRIOR PELING DATE: 1999-03-25
PRIOR PELING DATE: 1999-03-25
PRIOR PILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWARE: PSECSEQ for Windows Version 4.0
SEQ ID NO 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 606.2; DB 6;
Pred. No. 4.2e-182;
0; Mismatches 3;
Sequence 12, Application US/10137036
Publication No. US20030101478A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 97.0%;
Best Local Similarity 98.9%;
Matches 622; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          477
```

셤 ò

g ò 요

```
9
                                                                                                                                                                                                                                                                537 TAICGAACCICCACCACACATACTICATICCACCACCATTTATCCT 596
541 TAICGAACCICCACCACCACCACCACCATTCATTCT 600
                                                                                                                                                                                                                   480
1 CTGAGCCATTTAATTCGAGAGCACATCGCCAAAATTATTCTTGTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-927-641-12
Sequence 12, Application US/10927641
Sequence 12, Application US/10927641
Sequence 12, Application US/20050244968A1
Sequence 12, No. US20050244968A1
Sequence 12, No. US20050244968A1
Sequence 12, No. US20050244968A1
Septicant: Rice, Stephen
APPLICANT: Radian
APPLICANT: Lesham, Annette
APPLICANT: Wood, Marion
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: MOMBER: US/10/927,641
CURRENT FILING DATE: 2004-08-27
CURRENT FILING DATE: 2001-06-20
PRIOR APPLICATION NUMBER: PT/NZ 01/00115
PRIOR APPLICATION NUMBER: PT/NZ 01/00115
PRIOR PELING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-01-28
PRIOR PELING DATE: 2000-02-25
PRIOR PELING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWARE FRACESQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 64
                                                                              477 ACATATIGGIGTAGGGTCCAATATITIGGGGAGGGTTGGTGAACCGCAAAGTICCTATA
                                                                                                                            AGAGTITICICICIAIAITCIGGTICACCGGTIGGAGTCAATGGCAIGCGIGACGAATGT
                                                                                                                                                361 AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97.0%; Score 606.2; DB 10; Length 661; 98.9%; Pred. No. 4.2e-182; tive 0; Mismatches 3; Indels 4;
                                                                                                                                                                                                                                                                                                                                              597 CTGCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                601 CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 98.9
Matches 622; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-927-641-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                             417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                     ò
                                                                                                                                                                          임
                                                                                                                                                                                                                8
                                                                          ò
                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGCCCAACCCAGATTGCAAAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGGTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAATTTTCTCTTTTAGGTAAGTAAGCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                             481 ACATATIGGIGIAGGGICCAATATITIGCGGGAGGGIIGGIGAACCGCAAAGIICCTAIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                              GENERAL INCORMATION:
GENERAL INCORMATION:
APPLICANT: Rice Stephen
APPLICANT: Rice Stephen
APPLICANT: Eagleron, Clara
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000-1036-65
FULRENT APPLICATION NUMBER: U.S. No. 10/291,447
PRIOR APPLICATION NUMBER: U.S. No. 60/425,087
PRIOR FILING DATE: 2002-11-08
PRIOR PILING DATE: 2002-04-30
PRIOR FILING DATE: 2002-04-30
PRIOR FILING DATE: 2002-04-30
PRIOR FILING DATE: 2000-04-30
PRIOR FILING DATE: 2000-04-30
PRIOR FILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 60/146,591
PRIOR PILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 60/146,591
PRIOR APPLICATION NUMBER: U.S. No. 60/146,591
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 129
SEQ ID NO 12
LENGTH: 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
97.0%; Score 606.2; DB 9;
Best Local Similarity 98.9%; Pred. No. 4.2e-182;
Matches 622; Conservative 0; Mismatches 3;
                                                                                                                                         CTGCTTTCCTTTGCTCGAGTCTCGCGAA 625
                                                                                                                                                          601 CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 629
                                                                                                                                                                                                                                                            ; Sequence 12, Application US/10702319A
; Publication No. US20050026162A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-702-319A-12
                                                                                                                                                                                                                                                        -10-702-319A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

셤

g ò

ò

g ð

ò

```
; Sequence 60, Application US/10702319A; Publication No. US20050026162A1; GENERAL INFORMATION:
97.0%;
98.9%;
Query Match
Best Local Similarity 98.9
Matches 622; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-702-319A-60
                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               581
                                                                                                                                                                       61
                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         597
                                                                                       ò
                                                                                                                  유
                                                                                                                                                                     ò
                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACGCAAAGTTCCTATA 536
                                                                                                                                                                                                             Arcarcaccagarcagacagraagagraararraarrarraacaaaraacrcrraraccaga 300
                                                                                                                                                                                                                                                                                                301 AACTCCGTATTTCTCTCCACTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                       476
                                                                                                                                                                                                                                                                                                                                                                                                                                                        596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541 TATCGAACCTCCACCACCATCCACTTCAATCCCCACCATTTATCCGTTTTATTCT 600
                                                                                                                                                                       ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 300
                             GTATGATCTTGGAGTTGTTGGAGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                     AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                               AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGACACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                          AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                               GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAGTTTTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIDICARIO NO. USZU030101478A1

GENERAL INFORMATION:
APPLICANT: Perera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Bajecon, Clare
APPLICANT: Baglecon, Clare
APPLICANT: Wood, Maxion
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c4
CURRENT APPLICATION WOMBER: US/10/137,036
CURRENT FILING DATE: 2000-10-6-20
FRIOR APPLICATION NUMBER: US. No. USZ0030101478A1 09/724,624
FRIOR APPLICATION NUMBER: U.S. No. USZ0030101478A1 09/598,401
FRIOR APPLICATION NUMBER: U.S. No. USZ0030101478A1 09/598,401
FRIOR APPLICATION NUMBER: U.S. No. USZ0030101478A1 09/598,401
FRIOR APPLICATION NUMBER: U.S. No. USZ0030101478A1 09/276,599
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FILING DATE: 1999-03-25
FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FRIOR FR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CIGCITICCITIGCICGAGICICGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 60, Application US/10137036 Publication No. US20030101478A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: DNA
; ORGANISM: Eucalyptus grandis.
US-10-137-036-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
US-10-137-036-60
                                                                                     181
                                                                                                                                                                       241
                                                                                                                                                                                                                  241
    121
                                            121
                                                                                                                             181
                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                  417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                        8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 6
                                                                                                               g &
                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                 셤
                                                                                ઠે
                                                                                                                                                                                                                                        8
```

```
220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400
                                                                                                                                              100
                                                                                                                                                                                               120
                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                          281 ATCATCACCAGATCGGCCAGTAAGGGTAATATAATTTAACAAATAGGCTCTTGTACGGG 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCATCACCAGATCGGCCAGTAAGGGTAATATTAAGAAATAGCTCTTGTACCGGG 300
                                                                                                   9
                                                                                                                                                                                                                                                                                                                       161 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          341 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGGGAAAGCGACAGCC
                                                                                                                                                                                            CGAATTITCICITITAGGIAAGTAACCAAIGAIGACGCCAIGIIGACAAAAAGGCIGATIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361 AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              477 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTCTTGCCCCATAACTGT
                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                            AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4,
  Length 2096;
                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Registron, Applicant APPLICANT: Rejector, Stephen APPLICANT: Bagleton, Clair APPLICANT: Bagleton, Clair APPLICANT: Bagleton, Clair APPLICANT: Bagleton, Clair APPLICANT: Bagleton, Clair APPLICANT: Compositions and Methods for the TITLE OF INVENTION: Modification of Gene Expression FILE REFERENCE: 11000.1036c5 CURRENT PILING DATE: 2003-11-06 CURRENT PILING DATE: 2003-11-06 PRIOR APPLICATION NUMBER: U.S. No. 10/291,447 PRIOR FILING DATE: 2002-11-08 PRIOR FILING DATE: 2002-11-08 PRIOR APPLICATION NUMBER: U.S. No. 10/137,036 PRIOR FILING DATE: 2002-04-30 PRIOR APPLICATION NUMBER: U.S. No. 09/724,624 PRIOR PILING DATE: 2000-11-28 PRIOR PILING DATE: 2000-11-28 PRIOR APPLICATION NUMBER: U.S. No. 09/598,401 PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
                                                                                                   1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTT
Score 606.2; DB 6;
Pred. No. 7.9e-182;
0; Mismatches 3;
```

```
241 ATCATCACCAGATCGGGCGAGTAAGGGTAATATTAACTAAATAGCTCTTGTACGGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             417 AGAGITITICICIAIAITICIGGITCACCGGITGGAGTCAATGGCATGCGAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        477 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAAGCGGAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATGATCTTGGAGTTGTTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
APPLICANT: Visser, Elizabeth
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 1000.1036.40
CURRENT APPLICATION NUMBER: US/10/927,641
CURRENT FILING DATE: 2004-08-27
PRIOR APPLICATION NUMBER: PRIOR APPLICATION NUMBER: US/10/137,036
PRIOR PILING DATE: 2002-04-30
PRIOR PILING DATE: 2001-06-30
PRIOR FILING DATE: 2001-06-20
PRIOR FILING DATE: 2000-01-28
PRIOR FILING DATE: 2000-06-20
PRIOR PRILING DATE: 2000-06-20
PRIOR PRILING DATE: 2000-06-20
PRIOR PRILING DATE: 1000-02-24
PRIOR PRILING DATE: 1099-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
PRIOR PRILING DATE: 1999-07-30
                                                                                                                                                                                                                                                                                                                                                                                            Score 606.2; DB 10; Length 2096;
Pred. No. 7.9e-182;
0; Mismatches 3; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 97.0%;
Best Local Similarity 98.9%;
Matches 622; Conservative (
                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Eucalyptus grandis
US-10-927-641-60
                                                                                                                                                                                                                                                                                                                        SEQ ID NO 60
LENGTH: 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                      rype: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  537 TAICGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTAICCTTTAITTCCT 596
581 TAICGAACCTCCACCACCATACCTCACTTCAATCCCACCATTTAICCGTTTTAITTCCT 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGCAAATTTGCAAGCTGACGATGGCCCTCAGGGAAATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                 100
                                                                                                                                                                                                                                                                                                                                                                                                                   220
                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGGAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCGCCAACCCAAGATTGCAAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                 Length 2096;
                                                                                                                                                                                                                                                3; Indels
                PRIOR APPLICATION NUMBER: PCT/NZ00/00018
PRIOR FILING DATE: 2000-02-24
PRIOR PLING DATE: 1090-07-30
PRIOR PLLING DATE: 1990-07-30
PRIOR PLLING DATE: 1999-03-25
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 129
SOFTWARE: FastSEQ for Windows Version 4.0
: SEQ ID NO 60
: LENGTH: 2096
                                                                                                                                                                                                                   Query Match
97.0%; Score 606.2; DB 9;
Best Local Similarity 98.9%; Pred. No. 7.9e-182;
Matches 622; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-927-641-60
Sequence 60, Application US/10927641
Publication No. US20050244968A1
GENERAL INFORMATION:
APPLICANT: Perera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Eagleton, Clare
APPLICANT: Lasham, Annette
APPLICANT: Lasham, Annette
                                                                                                                                                                      TYPE: DNA
CRGANISM: Eucalyptus grandis
US-10-702-319A-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           477
                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                41
                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                요
                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                       g
```

596 640

536 580

416 460 476 520

340

180 220

120 160

100

```
TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481 CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     621
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                            US-10-703-091-1

Sequence 1, Application US/10703091

Sequence 1, Application US/10703091

Sequence 1, December 1, US-20040146904A1

SEQUENCE 1, US-20040146904A1

SEQUENCE 1, US-20040146904A1

APPLICANT: PHILLIPS, JONATHAN

APPLICANT: PHILLIPS, JONATHAN

TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF

TITLE OF INVENTION: VASCULAR-PREFERRED

CURRENT PILING DATE: 2003-11-07

PRIOR APPLICATION NUMBER: US/10/703,091

SEQUENCE TILING DATE: 2002-11-08

NUMBER OF SEQ ID NOS: 8

SOFTWARE: Patentin Ver. 3.2

SEQ ID NOS: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 CAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTCTCTCTATATTCTGGTTCACCGGTTGG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTTCAATCC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92 ATGCGCCATGTTGACAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTG 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      152 CAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAA 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        212 AGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATA 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             272 TTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTTCCATAAACCC 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGATTAATTTGGTGGGAAAGCGACAGCCAAACCCACAAAAGGTCAGATGTCATCCCACGA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 CTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGG 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGG 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 AGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACATACCTCACTTCAATCC 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGCGCCATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match

85.4%; Score 534; DB 8; Length 534;
Best Local Similarity 100.0%; Pred. No. 4.1e-159;
Matches 534; Conservative 0; Mismatches 0; Indels
641 CTGCTTTCCTTTGCTCGAGTCTCGCGGAA 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
US-10-703-091-2
US-10-703-091-2
; Publication No. US20040146904A1
; GENERAL INFORMATION;
APPLICANT: PHILLIPS, JONATHAN
; APPLICANT: EMGLETON, CLARE
                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                             US-10-703-091-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           572.
                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
```

```
US-10-703-091-3

US-10-703-091-3

Sequence 3, Application US/10703091

Publication No. US20040146904A1

GENERAL INFORMATION:
APPLICANT: BAGLETON.
TITLE OF INVENTION: VASCULAR-PREPERRED PROMOTER SEQUENCES AND USES THEREOF
FILE REFERENCE: 044463-0263;
CURRENT APPLICATION NUMBER: US/10/703,091

CURRENT FILING DATE: 2003-11-08

NUMBER OF SEQ ID NOS: 8

SOFTWARE: Patentin Ver. 3.2

LENGTH: 306

TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 AAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         261 TAAGGGTAATATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                321 TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATG 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361 TTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCACATATAT C 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421 CACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCTGGATCTCG 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301 reacceerreaagreaarecarecereaceareracararregereregerecaarar 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACTICAATCCCCACCATTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCG 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201 AAAGAGCACAAAAGAGCACGACCCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTGTAGGGTCCAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          141 GIGCAAATITIGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                 Query Match 77.6%; Score 485; DB 8; Length 485; Best Local Similarity 100.0%; Pred. No. 1.7e-143; Matches 485; Conservative 0; Mismatches 0; Indels
FILE REFERENCE: 044463-0263
CURRENT APPLICATION NUMBER: US/10/703,091
CURRENT FILING DATE: 2003-11-07
FRIOR APPLICATION NUMBER: 60/425,087
FRIOR FILING DATE: 2002-11-08
NUMBER OF SEQ ID NOS: 8
SOFTWARE: Patentin Ver. 3.2
LENGTH: 485
                                                                                                                                                                                                                                             TYPE: DNA
CRGANISM: Eucalyptus grandis
US-10-703-091-2
```

```
573 CACCATTTATCGTTTTTTTTTCCTCTGCTTTTCCTCGAGTCTCGCGGAA 625
             241 CACCATTTATCCGTTTTATTTCTCTGTGCTTTCCTTTGCTCGAGTCTCGCGGAA 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-10-703-091-6
                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-10-703-091-5
                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 100.
Matches 119; Conservative
                                                                                                                                                                                                                                                                                                                     LENGIH: 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                             셤
          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:

FUBLICATION NO. US20040146904A1

FUBLICATION NO. US20040146904A1

GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: PHILLIPS, JONATHAN

APPLICANT: EAGLETON, CLARE

TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF

TITLE OF INVENTION: VASCULAR-PREFERRED

CURRENT APPLICATION NUMBER: US/10/703,091

CURRENT PILING DATE: 2003-11-08

NUMBER OF SEQ ID NOS: 8

SOFTWARE: PATENTE: PATENTE: ASSECTION NOS: 8

SEQ ID NO 4

LENGTH: 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TIGGIGAACCGCAAAGITCCTATATATCGAACCTCCACCACCATACCTCACTTCAATCC 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      333 TGATTAATTTGGTGGGAAAGCGACAGCCAACCAAAAGGTCAGATGTCATCCCACGAG 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCAATGGCATGCGTGACGAATGTACATATTGGTGTGGGTCCAATATTTTGCGGGAGGG 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               o,
                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                          500 TITIGGGGAGGGIIGGIGAACCGCAAAGIICCIAIAIAIGGAACCICCACCACATACC 559
                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                              440 TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA 499
                                                                                                                                                                                                                                                             frcaccedfresagrcaarescarecereaceareracararresrereseresaga 180
                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                393 AGAGAGAGAGAGAGAGAGAGAGAGAGATITICICITATATICIGGITCACCGGITGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 igaitaaititagigggaaaagcgacaaccaaacgaaaaggicagaigicaiccaccaaag
                                                                                                               320 TICCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCAAAAAGGTCAGAT
                                                                                                                                   Gaps
                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                   .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 293;
                                                      Query Match
Best Local Similarity 100.0%; Pred. No. 1.8e-86;
Matches 306; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
46.9%; Score 293; DB 8; L
Best Local Similarity 100.0%; Pred. No. 2.4e-82;
Matches 293; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-10-703-091-4
               , ORGANISM: Eucalyptus grandis
US-10-703-091-3
                                                                                                                                                                                                                                                                                                                                                                                                                 620 GCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGGAA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                               셤
                                                                                                                                                                              ò
                                                                                                                                                                                                     g
                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                             පු
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                       ò
```

```
RESULT 15
US-10-703-091-6
; Sequence 6, Application US/10703091
; Sequence 6, Application No. US20040146904A1
; Publication No. US20040146904A1
; GENERAL INFORMATION:
    APPLICANT: PHILLIES, JONATHAN
; APPLICANT: EAGLETON, CLARE
; TILE REPRENCE: 044463-0263
; CURRENT FILING DATE: 2003-11-07
; PRIOR APPLICATION NUMBER: 60/425,087
; PRIOR FILING DATE: 2003-11-07
; PRIOR FILING DATE: 2002-11-08
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: PATENTIN Ver. 3.2
; SOFTWARE: PATENTIN Ver. 3.2
RESULT 14
US-10-703-091-5

is Sequence 5, Application US/10703091

sequence 5, Application US/10703091

publication No. US20040146904A1

GENERAL INFORMATION:
APPLICANT: PHILLIES, JONATHAN

APPLICANT: BAGLETON, CLARE

TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF

FILE REFERENCE: 044463-0263

CURRENT APPLICATION NUMBER: US/10/703,091

CURRENT FILING DATE: 2003-11-07

PRIOR APPLICATION NUMBER: 60/425,087

PRIOR FILING DATE: 2003-11-08

NUMBER OF SEQ ID NOS: 8

SOFTWARE: PATCHING US: 8

SEQ ID NO 5.

SEQ ID NO 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   586
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   527 AGTICCTATATATGAACCTCCACCACCATACCTCCACTTCAATCCCCATTATCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                 19.0%; Score 119; DB 8; Length 119; 100.0%; Pred. No. 5e-27; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 100.0%; Pred. No. 2.36-20;
Matches 98; Conservative 0; Mismatches 0; Indels
```

Search completed: November 1, 2006, 14:26:07 Job time : 800.58 secs

ANALE FIEL EDIA CIHT

```
US-11-229-856-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 78
LENGTH: 485
                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              321
ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 78, Appl Sequence 80, Appl Sequence 107, Appl Sequence 24951, Appl Sequence 24, Appl Sequence 116, Appl Sequence 116, Appl Sequence 21547, Sequence 21547, Sequence 21547, Sequence 215, Appl Sequence 323, Appl Sequence 251, Appl Sequence 251, Appl Sequence 251, Appl Sequence 251, Appl Sequence 251, Appl Sequence 251, Appl Sequence 251, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, Appl Sequence 2514, 
                                                                                                                                                                   (without alignments)
8946.617 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Published Applications NA New:*

1: /EMC Celerra SIDS3/ptcdata/2/pubpna/USO9 NEW PUB.seq:*
2: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USO6_NEW_PUB.seq:*
3: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USO8 NEW PUB.seq:*
4: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USO8 NEW PUB.seq:*
5: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USO8 NEW PUB.seq:*
6: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USO8 NEW PUB.seq:*
7: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USI1 NEW PUB.seq:*
8: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USI1 NEW PUB.seq:*
9: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USI1 NEW PUB.seq:*
10: /EMC Celerra_SIDS3/ptcdata/2/pubpna/USI1 NEW PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                             November 1, 2006, 11:48:44 ; Search time 135.549 Seconds
                                                                                                                                                                                                                                                                           1 ctgagccatttaattcgaga.....tttgctcgagtctcgcggaa 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                   GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                           . 4922752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-11-229-856-78
US-11-229-856-80
US-11-397-533-107
US-11-397-533-107
US-10-449-902-24951
US-11-397-533-107
US-11-397-533-24
US-11-397-533-106
US-11-397-533-106
US-11-266-748A-215547
US-11-266-748A-237674
US-10-539-228-353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-833-833-77
US-10-449-902-20101
US-10-539-228-395
US-10-540-898-511
US-10-449-902-25043
US-11-090-997-421
US-11-330-726-103
US-11-330-726-103
                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                 US-10-702-319A-113_COPY_1019_1643
                                                                                                                                                                                                                                                                                                                                                                                   2461376 segs, 970166171 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                     nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                   IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .5 100610 6
.5 103464 6
.5 1320443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .6 485
.0 306
.2 1951
.9 1630
.8 2168
.7 61009
.7 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4794
96597
124233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54037
58687
2651
2784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                407
176594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
601
                                          Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing:
                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40.8
40.6
40.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39.08
39.08
39.09
39.09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                       Perfect score:
                                                                                                       OM nucleic
                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum
                                                                                                                                                 .
Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ٠
و
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18
19
20
21
22
23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Result
```

```
Sequence 300, App
Sequence 143, App
Sequence 712, App
Sequence 22664, A
                                                                                                                                                                                      Sequence 131, App
Sequence 318, App
Sequence 41, Appl
Sequence 33, Appl
Sequence 229, Appl
Sequence 1422, App
Sequence 1653, App
Sequence 18409, Appl
Sequence 18409, Appl
Sequence 18409, Appl
Sequence 3402, Appl
Sequence 2844, Appl
Sequence 2844, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 AAAGAGCACAAAGAGGACGACCCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACCAGCCAACCCACAAAAGGTCAGATG 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261 TAAGGGTAATTTAATTTAACAAATAGCTCTTGTACCGGGGAACTCCGTATTTCTCTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  141 GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201 AAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence (Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 77.6%; Score 485; DB 8; Length 485; Best Local Similarity 100.0%; Pred. No. 4.3e-148; Matches 485; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 78, Application US/11229856
; Sequence 78, Application US/11229856
; Publication No. US20060130183A1
; GENERAL INFORMATION:
; APPLICANT: ROTTWANN, WILLIAM H.
; APPLICANT: ROTTWANN, WILLIAM H.
; APPLICANT: SANDERS, PAUL
; APPLICANT: ZHANG, GARY
; APPLICANT: EAGLETON, CLARE
; APPLICANT: EAGLETON, CLARE
; APPLICANT: PITZGERALD, SANDRA JOANNE
; APPLICANT: POT SALOS OF SALOS
; APPLICANT: OF INVENTION: WODIFICATION OF PLANT LIGNIN CONTENT
; PILE REPERENCE: 044463-041
; CURRENT PILING DATE: 2004-09-20
; PRIOR PILING DATE: 2004-09-22
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PATENTIN VET. 3.3
                                  US-10-69-920-113

US-11-669-920-112

US-11-65-355B-64700

US-11-056-355B-64700

US-10-669-920-118

US-11-021-837-41

US-10-539-228-131

US-10-540-898-23

US-11-330-726-229

US-11-330-726-229

US-11-330-726-229

US-11-659-920-1422

US-10-669-920-1422

US-10-612-783-744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-11-266-748A-32181
US-10-539-228-697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-669-920-1007
US-10-540-898-942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ) ORGANISM: Eucalyptus grandis
US-11-229-856-78
6.3 50378
6.3 120144
6.3 120144
6.3 1071650
6.3 247434
6.2 140968
6.2 140968
6.2 140968
6.2 151858
6.2 151858
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
6.1 182582
```

g ઠે 유 ò

g ઠે

셤 ठ

8

```
Sequence 96, Application US/11404951

Sequence 96, Application US/11404951

publication No. US20060236421A1

GENERAL INFORMATION:
APPLICANT: PENNELL, Roger I.
APPLICANT: DANG, David Vandinh
APPLICANT: APUTA, Nestor

TILE OF INVENTION: Secondary Metabolite Production via Manipulation of TILE OF INVENTION: Genome Methylation
FILE REPREENCE: 18207-005001

TILLE OF INVENTION: Genome Methylation
FILE REPREENCE: 18207-005001

CURRENT PILING DATE: 2006-04-14

PRIOR APPLICATION NUMBER: 60/771,209
PRIOR FILING DATE: 2005-04-14

PRIOR FILING DATE: 2005-04-14

PRIOR FILING DATE: 2005-11-04

NUMBER OF SEQ ID NOS: 145

LENGTH: 1951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          415 AGAGAGITITCICICIAIAITICIGGITCACCGGITGGAGICAATGGCAIGCGIGACGAAI 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   475 GIACATAITIGGIGIAGGGICCAATAITITIGCGGGAGGGITIGGIGAACCGCAAAGITICCTA 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     648 canagagaragradiaradaragaragararitaradacaccarracaradadacacagagararana 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 TCACTICAATCCCCACCATTIATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               708 AGAGAGACTGCAGTTATTTGTGTCTTGAGATAGACAAAGAACTGAAGGAATGGTGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Bloksberg, Leonard N. APPLICANT: Bloksberg, Leonard N. APPLICANT: Bloksberg, 11kka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content
TITLE OF INVENTION: Woddification of Plant Lignin Content
TITLE OF INVENTION: WOMBER: US/11/397,533
CURRENT APPLICATION NUMBER: US 08/95,316
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR PLING DATE: 1996-09-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 7.2%; Score 45; DB 7; Length 1951; Best Local Similarity 50.7%; Pred. No. 0.0006; Matches 108; Conservative 0; Mismatches 105; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; LOCATION: (1). T(1951); OTHER INFORMATION: Ceres PROMOTER ID no. p524d05
US-11-404-951-96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rererecererecerecesakacaritra 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    535 TATATCGAACCTCCACCACCATACCTTCA 567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 107, Application US/11397533
; Publication No. US20060183895A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Oryza sativa
                                                      620 GCGGAA 625
                                                                                             301 GCGGAA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 4
US-11-397-533-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ծ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCACTICAATCCCCACCATTATCCGTTTTATTCCTCTGCTTTCCTTGCTCGAGTCTC 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     440 TICACCGGTIGGAGICAATGGCATGACGTGACGAATGTACATATGGTGTAGGGTCCAATA 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             320 TTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAACCCAAAAAAGGTCAGAT 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CACTICAATCCCCACCATTIATCCGTTTTATTTCCTCTGCTTTCCTTTTGCTCGAGTCTCG
                                                                                                                                                                                                                                                                                                               500
                                                                                                                                                                 560
                                                                                                                                                                                                                                                        420
                                                                                                 TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                500 TITIGCCGCAGGCTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACC
                                                                                                                                           TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                                                                                    TTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATTGGAACCTCCACCATACCT
                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 100.0%; Pred. No. 1.16-89;
Matches 306; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENEKAL INFURMATION:
APPLICANT: FORSTER, RICHARD L.
APPLICANT: ROTAMAN, WILLIAM H.
APPLICANT: CONNETT, MARIE B.
APPLICANT: SANDERS, PAUL
APPLICANT: ZHANGK, GARY
APPLICANT: ZHANGK, GARY
APPLICANT: ZHANGK, GARY
APPLICANT: EAGLERON, CLARE
APPLICANT: BAGLERON: MODIFICATION OF PLANT LIGNIN CONTENT
FILE OF INVENTION: MODIFICATION NUMBER: 10/11/229,856
CURRENT PREDICATION NUMBER: 10/946,650
PRIOR FILING DATE: 2004-09-22
PRIOR FILING DATE: 2004-09-22
PRIOR FILING DATE: 2004-09-22
NUMBER OF SEQ ID NOS: 86
SOFTWARE: PATENTIN OF NOS: 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 80, Application US/11229856
Publication No. US20060130183A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , ORGANISM: Eucalyptus grandis
US-11-229-856-80
                                                                                                                                                                                                                                                                                                                                                                                    CGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                          CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-11-229-856-80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          380
                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                             561
                                                                                                                                                                                                                                                                                                                                                                                      621
                                                                                                                                                         441
                                                                                                                                                                                                                                  501
                                                                                381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
```

ö

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          436 CTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCC 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 24951, Application US/10449902

Sequence 24951, Application US/10449902

Publication No. US20060123503A1

GENERAL INFORMATION:

APPLICANT: National Institute of Agrobiological Sciences.

APPLICANT: The Institute of Physical and Chemical Research.

APPLICANT: Foundation for Advancement of International Science.

APPLICANT: Foundation for Advancement of International Science.

TILE REFERENCE: MOA-A0205Y1-US

FILE REFERENCE: MOA-A0205Y1-US

FURRENT FILING DATE: 2002-203269

PRIOR FILING DATE: 2002-205-30

PRIOR PLING DATE: 2002-05-30

PRIOR PLING DATE: 2002-12-11

NUMBER OF SEC ID NOS: 56791

SOFTWARE: PatentIN Ver. 2.1

SEQ ID NO 24951

LENGTH: 2168
                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 6.8%; Score 42.6; DB 6; Length 2168; Best Local Similarity 55.9%; Pred. No. 0.0038; Matches 81; Conservative 0; Mismatches 64; Indels 0;
                                                                                                                                                                                                                                                                                                                                                  6.9%; Score 43; DB 7; Length 1630;
100.0%; Pred. No. 0.0025;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CCGTTTTATTTCCTCTGCTTTCCTTTGCTCGCGGAA 43
                                                                                                                                                                                                                                                                                                                                                                                                                                              583 CCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA
                 PRIOR APPLICATION NUMBER: US 60/143,833
PRIOR FILING DATE: 1999-07-14
PRIOR PILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR PILING DATE: 2002-06-18
PRIOR PILING DATE: 2002-06-18
NUMBER OF SEQ ID NOS: 407
SOFTWARE: PastSEQ for Windows Version 3.0
SEQ ID NO 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   496 AATATTTGCGGGAGGGTTGGTGAA 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               132 TTŤTŤŤGĆĆATTCAĞŤGĞĆCĞAA 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Oryza sativa
PUBLICATION INFORMATION:
DATABASE ACCESSION NUMBER: AK100393
DATABASE ENTRY DATE: 2002-08-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-669-920-57/c
; Sequence 57, Application US/10669920
; Publication No. US20060194265A1
                                                                                                                                                                                                                                                     TYPE: DNA ORGANISM: Eucalyptus grandis
FILING DATE: 1998-10-09
                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 100.
Matches 43; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
US-10-449-902-24951/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-449-902-24951
                                                                                                                                                                                                                                                                                                      US-11-397-533-107
                                                                                                                                                                                                                                  LENGTH: 1630
                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
```

```
s9866 circciaiacaiaaaacccidaagaagagagagagagagagagagagacagagacacagagag 59807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          315 CTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGT 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 61009;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Blokeberg, Leonard N.
APPLICANT: Blokeberg, Leonard N.
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content
FILE REPERBNCE: 11000.1003c6
CURRENT APPLICATION NUMBER: US/11/397,533
CURRENT FILING DATE: 2006-04-03
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR FILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: US 08/713,000
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-14
PRIOR FILING DATE: 1996-09-14
PRIOR FILING DATE: 1999-07-14
PRIOR FILING DATE: 1999-07-14
PRIOR FILING DATE: 1999-07-14
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-13
            APPLICANT: MOITIS, DAVIG W.
APPLICANT: MAIDATON NOVEL THERAPEUTIC TARGETS IN CANCER FILLS REFERENCE: 2006-06600.
FILLS REFERENCE: 2006-0600.
CURRENT APPLICATION NUMBER: US 10/004,113
PRIOR FILING DATE: 2003-09-23
PRIOR FILING DATE: 2001-10-23
PRIOR PILING DATE: 2001-11-08
PRIOR PELING DATE: 2001-11-08
PRIOR PELING DATE: 2001-11-30
PRIOR PLING DATE: 2001-11-30
PRIOR APPLICATION NUMBER: US 09/997,722
PRIOR APPLICATION NUMBER: US 10/034,650
PRIOR APPLICATION NUMBER: US 10/034,650
PRIOR APPLICATION NUMBER: US 10/035,117
PRIOR PILING DATE: 2002-02-7
PRIOR PILING DATE: 2002-03-01
PRIOR PILING DATE: 2002-03-01
PRIOR PILING DATE: 2002-13-17
PRIOR PILING DATE: 2002-13-17
PRIOR PILING DATE: 2002-12-17
NUMBER OF SEQ ID NOS: 1441
SEQ ID NO 57
LENGTH: 61009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 6.7%; Score 42; DB 6; Best Local Similarity 62.3%; Pred. No. 0.033; Matches 66; Conservative 0; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-11-397-533-24
. Sequence 24, Application US/11397533
. Publication No. US20060183895A1
. GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature

LCCATION: (1)...(61009)

OTHER INFORMATION: n = A,T,C or G

US-10-669-220-57
David W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
```

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match

6.7%; Score 41.8; DB 6; Length 132942;
Best Local Similarity 68.2%; Pred. No. 0.057;
Matches 58; Conservative 0; Mismatches 27; Indels 0;
                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                    Score 41.8; DB 7; Length 421;
Pred. No. 0.0031;
0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                    581 ATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: MORITION.
APPLICANT: MAIANDOW, MARC S.
TITLE OF INVENTION: NOVEL THERAPEUTIC TARGETS IN CANCER
FILE REFERENCE: 2036-606001
CURRENT APPLICATION NUMBER: US/10/669,920
CURRENT FILING DATE: 2001-09-23
PRIOR PILING DATE: 2001-10-23
PRIOR APPLICATION NUMBER: US 10/004,113
PRIOR APPLICATION NUMBER: US 10/004,113
PRIOR APPLICATION NUMBER: US 10/004,122
PRIOR APPLICATION NUMBER: US 10/034,650
PRIOR FILING DATE: 2001-11-30
PRIOR FILING DATE: 2001-12-20
PRIOR PILING DATE: 2001-12-20
PRIOR PILING DATE: 2001-12-20
PRIOR PILING DATE: 2002-02-27
PRIOR PILING DATE: 2002-02-27
PRIOR PILING DATE: 2002-02-27
PRIOR PILING DATE: 2002-02-27
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
PRIOR PILING DATE: 2002-12-17
                                                                                                                                                                                                                                                                                                                                                                       13 AGCGGTTTTATTTCTCTCTGATTTCCTTTGCTCGAGTCTCGCGGAA 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111550 GAAGTACAGAGATGTATGACCACT 111526
SOFTWARE: FastSEQ for Windows Version 3.0 SEQ ID NO 24 LENGTH: 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      450 GGAGTCAATGGCATGCGTGACGAAT 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-669-920-131/c
; Sequence 131, Application US/10669920
; Publication No. US20060194265A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: misc_feature
; LOCATION: (1). T. (132942)
; OTHER INFORMATION: n = A,T,C or G
US-10-669-920-131
                                                                                                                                                                                                                 ch
11.Similarity 95.6%;
43; Conservative
                                                                                                   ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-11-397-533-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 131
LENGTH: 132942
                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                             a
```

RESULT 9
US-11-397-533-106
US-11-397-533-106
is beduence 106, Application US/11397533
is publication No. US20060183895A1
is GENERAL INFORMATION:

```
19504 AFFCAFFFAAGAGCAFFAFFFFAGAAGGGAAFAGTGCCFFFFCFCFCACAFAGGGC 19445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    331 CCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAAGGTCAGATGTCATCCCACG 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           271 ATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTTCCATAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
6.6%; Score 41.2; DB 6; Length 176594;
Best Local Similarity 54.7%; Pred. No. 0.1;
Matches 82; Conservative 0; Mismatches 68; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ## Sequence 495, Application US/10539228

## Sequence 495, Application US/10539228

## Sequence 495, Application No. US20060154250A1

## GENERAL INFORMATION:
## SPELICANT: David W. Morris

## APPLICANT: Marc S. Malandro

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Compositions and Methods in Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer

## TITLE OF INVENTION: Novel Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 41.4; DB 7; Length 407;
Pred. No. 0.0041;
0; Mismatches 1; Indels
APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for the.
TITLE OF INVENTION: Maderials and Methods for the.
TITLE OF INVENTION: Modification of Plant Lignin Content
FILE REPERENCE: 11000.1003c6
CURRENT APPLICATION NUMBER: US 08/975,316
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR FILING DATE: 1995-11-21
PRIOR APPLICATION NUMBER: US 09/169,789
PRIOR FILING DATE: 1996-09-11
PRIOR APPLICATION NUMBER: US 09/169,789
PRIOR FILING DATE: 1998-10-09
PRIOR FILING DATE: 2000-00
PRIOR FILING DATE: 2000-00-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-06-18
NUMBER OF SEQ ID NOS: 407
SOFTWARE: PRASESQ for Windows Version 3.0
SOFTWARE: PRASESQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 583 CCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CGGTTTATTTCCTCTGATTTCCTTTGCTCGAGTCTCGCGGAA 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; LOCATION: (1)...(176594)
; OTHER INFORMATION: n = A,T,C or G
US-10-539-228-495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 6.6%;
Best Local Similarity 97.7%;
Matches 42; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
CRGANISM: Eucalyptus grandis
US-11-397-533-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
```

g

```
or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc feature
LOCATION: (465)..(466)
OTHER INFORMATION: n is a, c, g, or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 c, g, or t
                                                      or
                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ς,
α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ς,
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ς,
σ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΰ
                                                      ΰ
                                                                                                                                                                                                                                                           υÌ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ϋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
NAME/KEY: misc_feature
LOCATION: (458)..(458)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                         LOCATION: (334)...(334)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature
LOCATION: (368)..(368)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
LOCATION: (389)..(389)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (392)...(392)
OTHER INFORMATION: n is a,
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature
LOCATION: (398)..(398)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (400)..(400)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (428)...(428)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (435)..(435)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
NAME/KEY: misc_feature
LOCATION: (452)..(453)
OTHER INFORMATION: n is a,
                          LOCATION: (268)...(268)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: (351)..(351)
OTHER INFORMATION: n is a
                                                                                                   NAME/KEY: misc feature
LOCATION: (329)..(329)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (364)..(364)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (407)..(407)
OTHER INFORMATION: n is
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (413)..(413)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc feature
LOCATION: (423)
OTHER INFORMATION: n is
NAME/KEY: misc feature LOCATION: (268)..(268)
                                                                                                                                                                                                    NAME/KEY: misc feature LOCATION: (334)..(334)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY: misc_feature
                                                                                                                        US-11-266-748A-215547
US-11-266-748A-215547

US-11-266-748A-215547

Sequence 2155477, Application US/11266748A

Publication No. US20060134663A1

GENERAL INPORMATION:

APPLICANT: Johnston, Patrick

APPLICANT: Mulligan, Karl

TITLE OF INVENTION: Transcriptome Microarray Technology and

TITLE OF INVENTION: Transcriptome Microarray Technology and

TITLE OF INVENTION: Transcriptome Microarray Technology and

TITLE OF INVENTION: Wethods of Using the Same

CURRENT FILING DATE: 2005-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2004-11-03

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

NUMBER OF SEQ ID NOS: 483996

SOFTWARE: PATENTIN VARIER: PATENTIN VARIER: PATENTING DATE: 2005-07-18

NUMBER OF SEQ ID NOS: 483996

SOFTWARE: PATENTING DATE: 2005-07-18

PATENTING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18

PRIOR PELING DATE: 2005-07-18
                               19384 AGAGAGAGAGAGAGAGAAAAGAGAGAGAG 19355
  391 AGAGAGAGAGAGAGAGAGAGAGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (234)..(234)
OTHER INFORMATION: n is a, c, g, or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               מֿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (211)..(211)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc feature
LOCATION: (1347..(135)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (152)..(152)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (160)..(160)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (221)..(221)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
LOCATION: (128)..(132)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc feature
LOCATION: (149)..(149)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Homo Sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature LOCATION: (221)..(221)
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οĭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ů
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ບ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (1)...(1)
OTHER INFORMATION: n is a,
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
NAME/KEY: misc feature
LOCATION: (7)...(7)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (5)...(5)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (9). (9)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OCHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA ORGANISM: Homo Sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match
Best Local Similarity 73.4%; Pred: No. 0.0067;
Matches 47; Conservative 0; Mismatches 17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION: (569)..(570)
OTHER INFORMATION: n is a, c, g, or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or t
                                                                                                                                                                                                                                                                                                                                     or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PERATURE:
NAME/KEY: misc feature
LOCATION: (564)...(564)
PEATURE: INFORMATION: n is a, c, g, or PEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                    or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                          ö
                ö
                                                                               or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (560)...(560)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ģ
                                                                                                                                                                                                                                                                                                                                                    FEATURE:
NAME/KEY: misc feature
LOCATION: (509)..(509)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (547)...(547)
OTHER INFORMATION: n is a, c, 9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ģ
                                                                                                                                                           FEATURE:
NAME/KEX: misc feature
LOCATION: (485)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ຫ້
                                                                                                                                                                                                                                                           :ON: (497)..(497)
INFORMATION: n is a, c, g,
                                                                                                                                               ģ
                  ຫ້
                                                                               ģ
                                             NAME/KEY: misc_feature
LOCATION: (475)..(475)
COTHER INFORMATION: n is a, c, g,
FEATURE:
NAME/KEY: misc_feature
LOCATION: (480)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (556)...(558)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
NAME/KEXY: misc_feature
LOCATION: (552)..(554)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (506)..(506)
OTHER INFORMATION: n is a, C,
                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (517)..(518)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (533)..(536)
OTHER INFORMATION: n is a, C,
LOCATION: (470)..(470)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc feature LOCATION: (569)..(570)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc feature
LOCATION: (576)..(579)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (547)..(547)
                                                                                                                                                                                                                         FEATURE:
NAME/KEY: misc feature
```

```
RESULT 12

US-11-266-748A-237674/C

US-11-266-748A-237674, Application US/11266748A

Sequence 237674, Application US/11266748A

Publication No. US20060134663A1

APPLICANT: Harkin, Paul

APPLICANT: Harkin, Paul

APPLICANT: Mulligan, Patrick

APPLICANT: Mulligan, Rarl

TITLE OF INVENTION: Methods of Using the Same

FILE REFERENCE: 55815-0102 (312189)

CURRENT APPLICATION NUMBER: US/11/266,748A

CURRENT APPLICATION NUMBER: EP 04105479.2

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2004-11-03

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18

PRIOR FILING DATE: 2005-07-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (38)...(38)
OTHER INFORMATION: n is a, c, 9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ο
σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COCATION: (16)...(18)
OTHER INFORMATION: n is a, c, FRATURE:
NAME/KEY: misc_feature
LOCATION: (23)...(26)
OTHER INFORMATION: n is a, c.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (32)..(33)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
NAME/KEY: misc_feature
```

ö

0; Gaps

390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT 449

요 ઠે

ò

```
NAME/KEY: misc_feature
LOCATION: (174)...(174)
OTHER INFORMATION: n is a, c, g, or t
FEATURE:
                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: misc_feature
LOCATION: (66)..(69)
OTHER INFORMATION: n is a, c, g, or
                                                                                                                                                                  or
                                                                                                                                                                                                                                                                                                                 FEATURE:
NAME/KEY: misc_feature
LOCATION: (84)...(85)
OTHER INFORMATION: n is a, c, g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or
                                    ö
                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY: misc_feature
LOCATION: (149)..(150)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: misc_feature
LOCATION: (93)...(93)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: misc feature
LOCATION: (1677). (1677)
OTHER INFORMATION: n is a, c, g,
                                    ģ
                                                                                                                                                                   ō
                                                                                                                                                                                                                                   ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         တ်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
NAME/KEY: misc feature
LOCATION: (127)..(127)
OTHER INFORMATION: n is a, c,
NAME/KEY: misc feature
LOCATION: (42)...(42)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                  LOCATION: (55)...(55)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: (96)_.(96)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ϋ
                                                                                                                                                                   ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (136)..(137)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (105)..(105)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: misc_feature
LOCATION: (144)..(144)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (132).
OTHER INFORMATION: n is a,
                                                                                                                                                  LOCATION: (48)..(50)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (117) ..(117)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (1227..(122)
DTHER INFORMATION: n is a,
                                                                                 LOCATION: (44)...(46)
OTHER INFORMATION: n is a,
                                                                                                       FEATURE:
NAME/KEY: misc_feature
'^^nTON: (48)...(50)
                                            FEATURE:
NAME/KEY: misc feature
LOCATION: (44)...(46)
                                                                                                                                                                               FEATURE: Misc feature LOCATION: (55)...(55)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature GOCATION: (117)..(117)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE: NAME/KEY: misc feature LOCATION: (136)..(137)
```

```
390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 6.6%; Score 41; DB 8; Length 601; Best Local Similarity 73.4%; Pred. No. 0.0067; Matches 47; Conservative 0; Mismatches 17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
LOCATION: (368)..(368)
OTHER INFORMATION: n is a, c, g, or t
                                                                                                                                                                                                                                                                                                       or t
                                                                                                                                                                                                                                                                                                                                                                                                                                           or
t
                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                         or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (234)...(234)
OTHER INFORMATION: n is a, c, g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ör
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                      ö
                                                                                                      뒪.
                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
LOCATION: (213)..(213)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                       ອັ
                                                                                                                                                                                                                                                                                                                                                                         တ်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ģ
                                                                                                                                                                    α,
α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              က်
တ်
                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (210)..(210)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: (251)..(251)
OTHER INFORMATION: n is a, c,
NAME/KEY: misc feature
LOCATION: (179)..(179)
OTHER INFORMATION: n is a,
                                                                                                                                 NAME/KEY: misc feature
LOCATION: (195)..(195)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
LOCATION: (204)..(204)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (268)..(268)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (238)...(238)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (334)..(334)
OTHER INFORMATION: n is
                                                                   NAME/KEY: misc feature
LOCATION: (1897..(189)
OTHER INFORMATION: n is
                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (202)..(202)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature LOCATION: (273) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (251)..(251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature LOCATION: (381)..(381)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  467 NGGG 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  450 GGAG 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

ö

RESULT 13

```
14634 Gagadadadadadadadadadagadaddacaridaagiacacacadadadadadada 14693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35198 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGACATGGCTCTCCTAGGTGTGATTGAGGAGGT 35257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               390 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 62.1%; Pred. No. 0.12;
Matches 64; Conservative 0; Mismatches 39; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 67.9%; Pred. No. 0.1;
Matches 57; Conservative 0; Mismatches 27; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-LU-337-42E-343,
Sequence 323, Application US/10539228
; Bublication No. US20060154250A1
; GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Novel Compositions and Methods in Cancer
TITLE OF INVENTION: Novel Compositions and Methods in Cancer
FILE REPERENCE: CHIRO522-101 (PP023370.0003)
CURRENT FILING DATE: 2005-06-17
; PRIOR PAPLICATION NUMBER: US/10/539,228
; UNRENT FILING DATE: 2005-12-18
; NUMBER OF SEQ ID NOS: 866
; SOFTWARE FASTSEQ for Windows Version 4.0
US-10-540-898-585; Application US/10540898; Sequence 585, Application US/10540898; Publication No. US20060166213A1; GABREAL INFORMATION:

APPLICANT: DAVIG W. Morris
APPLICANT: Marc Malandro
TITLE OF INVENTION: Novel Compositions and Methods in Cancer; FILE REPERENCE: CHINGO56-101 (PP023367.0003); CURRENT APPLICATION NUMBER: US/10/540,898; PRIOR PILING DATE: 2005-06-27; PRIOR APPLICATION NUMBER: US 10/330,773; NUMBER OF SEQ ID NOS: 981

SOFTWARE: FastSEQ for Windows Version 4.0

FUND SES TO NO 585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14694 GAGAGAGAGAGAGAGAGAAAAAAAACTTATGAATCACCG 74736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 404 GAGAGAGAGAGAGAGTTTTCTCTTATATTCTGGTTCACCG 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35258 AGAGTTTATTGTAGCTATGAGGGA 35281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               450 GGAGTCAATGGCATGCGTGACGAA 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; LOCATION: (1)...(103464)
; OTHER INFORMATION: n = A,T,C or G
US-10-539-228-323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NAME/KEY: misc_feature
| LOCATION: (1)...(100610)
| OTHER INFORMATION: n = A,T,C or G
US-10-540-898-585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 323
LENGTH: 103464
                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 100610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-539-228-323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
1252615 cherchentarichentacheacheacheachaghagaragadahahahahahaha 1252556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     303 CICCGIAITICICICACTICCATAAACCCCTGATTAATTIGGTGGGAAAGCGACAGCCAA 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 40.6; DB 6; Length 1320443;
Pred. No. 0.45;
0; Mismatches 59; Indels 0; C
                                                                     APPLICANT: Malandro, Marc S.
APPLICANT: Malandro, Marc S.
APPLICANT: Lai, Albert
APPLICANT: Lai, Albert
APPLICANT: Tae, Christin
APPLICANT: Fateay, Ali
TILE REFERENCE: 2036-0380017
FILE REPERENCE: 2036-0380017
CURRENT APPLICANT: 2004-04-27
NUMBER OF SEQ ID NOS: 175
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 77
LENGTH: 1320443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Search completed: November 1, 2006, 14:52:55 Job time : 136.549 secs
                                                                                                                                                                                                                                                                                                                                                                       ; FEATURE:
; NAME/KEY: misc_feature
; LOCATION: (1) _(1320443)
; OTHER INFORMATION: n = A, C, G, or T/U
US-10-833-833-77
              Sequence 77, Application US/10833833 Publication No. US20060194210A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1252495 GAGTGAGTATATTT 1252481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         423 TICICICIATATICT 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 6.5%;
Best Local Similarity 56.3%;
Matches 76; Conservative
                                                                                                                                                                                                                                                                                                                                      TYPE: DNA ORGANISM: Mus musculus
US-10-833-833-77/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
GenCore version 5.1.9 Copyright (c) 1993 - 2006 Biocceleration Ltd.
```

model
8
using
search,
nucleic
ŧ
nucleic
ŏ

Seconds		
9		;
; Search time 17537.9 Second	without alignments)	
Ξ	g	1
; Search	(without	
6		
October 31, 2006, 23:27:09		
2006,		
31,		
October		
ou:		
Run on:		

^{11193.945} Million cell updates/sec

¹²⁷³²²⁷² Total number of hits satisfying chosen parameters:

000	Minimum Match 0% Maximum Match 100% Listing first 45 summaries
2000000000	Match Match First
seq length: (seq length: 2	Minimum Maximum Listing
08 08 08	Post-processing: Minimum Match Maximum Match Listing first
Minimum Maximum	Post-p

* * * * * *	* * * * * * * * * * * * * * * * * * *
GenEmbl:* 1: gb_env 2: gb_pat 3: gb_ph: 4: gb_ph: 5: gb_pr: 6: gb_pr: 7: qb_gb_ro	
Database :	

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	AR360987 Sequence BD262168 Compositi AR360953 Sequence BD224383 Materials AR216433 Sequence AR432835 Sequence AR432835 Sequence AR73814 E.gunnii OM AF006009 Clarkia b AX773024 Sequence AR220491 Fragaria AX773026 Sequence DQ001169 Acacia ma AB086104 Rosa chin AJ439740 Rosa chin AJ439740 Rosa chin AJ439770 Compositi AR360905 Sequence AR637756 Sequence
SUMMARIES	AR360987 BD262168 AR360953 BD224383 AR216433 AR432835 BGOMTRN AF006009 AF773024 AF773024 AF773026 DO001169 AR0861104 RCH439740 BD262120 AR360905
DB	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Length DB	20096 20096 20096 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300 16300
Query Match	100.0 65.8 65.8 65.8 65.8 65.8 65.8 65.8 65.8
Score	2020.4 2020.4 1429.6 1429.6 1429.6 1429.6 676.6 675.6 675.7 671.6 675.8 671.6 671.6 671.6 671.6 671.6 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 673.8 674.8 674.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8 675.8
Result No.	1222426742777777777777777777777777777777

g

ò

ò

181 AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATTGTAT 240

X62096 P. tremuloi AF237777 Populus t A26484 Poplar pPLC AR076850 Sequence M73431 Populus x 9 U86760 Clarkia bre L136109 Stylosanthe	Ak366/26 Sequence AR382609 Sequence AF454632 Coffea ca AF454631 Coffea ca AF139533 Liquidamb AF154917 Ocimum ba	AF154914 Outside ba AF239740 Vitis vin AY087297 Arabidops AY081565 Arabidops AY062837 Arabidops CQ805088 Sequence U70424 Arabidopsis	AA366/35 Sequence AR382616 Sequence M63853 Medicago sa AX259373 Sequence U83789 Capsicum an AF212316 Capsicum AF067968 Mesembrya
PTLBCA AF237777 A26484 AR076850 POPOME CBU86760	AR366728 AR382609 AF454632 AF74533 AF139533	AF154918 AF239740 AY087297 AY062837 CQ805088 ATU70424	AR366735 AR382616 ALFSALMOAT AX259373 CAU83789 AF212316
44004440	004444	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ 	7040444
1503 1080 1368 1375 1486	1370 1380 1386 1386 1377	1187 1396 1266 1157 1328 1092	1314 1317 1098 1377 1503
200000000000000000000000000000000000000	199.5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18.1 18.1 18.1 17.5 17.5
631 621.6 618.2 618.2 618.2 618.2 613.6	603.8 601.6 601.6 598.8 582.8	577.6 556.4 564.8 564.8 564.6	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.
22 2 2 2 2 2 2 3 2 3 2 3 2 3 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	370 8 7 9		2 4 4 4 4 4 4 2 2 2 2 2 2 2 2 2 2 2 2 2

ALIGNMENTS

		Sequence 113 from patent US 6596925. AR360987	AR360987.1 GI:33768497	Unknown.	Unknown. Unclassified.	:0 3070)	and	Compositions and methods for the modification of gene expression Patent: US 6596925-A 113 22-JUL-2003;	Genesis Research & Development Corp. Ltd. and Rubicon Forests Holdings Ltd.; Parnell; NZX;	Location/Qualifiers	1. :3070 /organism="unknown" /	/ יייסד בעלקב הפונסיייני סאיט	100.08;	BEST LOCAL SINITATILY 100.0%; FIGU. NO. 0; MATCHES 3070; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	1 ACCACCATCAGCAAAAATAGATGGGATAGAGTGGGACACCACCACTGTTCAGTTTGATTC 60	1 AGCACCATCAGCAAAAAATAGATGGGATAGAGGGACACCACCTGTTCAGTTTGATTCC 60	1 CTTGAGATGACCTACAGTGATAGATGAATAAGATGGGATAATAGATTCACCAGAGG 120	1 CTIGAGAIGACCIACAGIGAIAGCITGAIGAAIAAGAIGGGAIAAIAGAIICACCAGAGG 120
r 1 987	•	DEFINITION S ACCESSION A	VERSION A	_	ORGANISM U	REPERENCE 1	SS	TITLE C		FEATURES	source	ORIGIN	Query Match	Best Local Matches 307	Qy 1	Db 1	Qy 61	Db 61
		-																

US-10-702-319A-113 3070 1 agcaccatcagcaaaaaata.....acttcgaacaaaaaaaa 3070 Title: Perfect score:

Sequence:

⁶³⁶⁶¹³⁶ segs, 31973710525 residues IDENTITY NUC Gapop 10.0 , Gapext 1.0 Scoring table: Searched:

131 CCCCCAMAGGCCACATCCATAMACCCCCATTAMTTGGTGGGAAGGCACACCACATATATATTGGTGGGAAGGCACACCACACATATATAT
9 2 9 2 9 2 9 2 9 2 9 2 9 2 9 2 9 2 9 2
24 CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CONTINUED CON

ద

8

8 B S

```
1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1854
                                                                                                                                                                                                                                                                                                                                              ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 160
                                                                                                                                                                                                                                                                                                                                                                                                                         100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      700
                                                                                                                                                gum)'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            281 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGACCGGATCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGGAGGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATGATCTTGGAGTTGTTGGTGCAATTTGCAAGCTGACGACGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  161 GTATGATCTTGGAGTTGTTGTGCAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      341 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1379 AACCCACAAAAGGTCAGATGTCATCCCAC----GAGAGAGAGAGAGAGAGAGAGAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1495 ACATATTGGTGTAGGGTCCAATATTTTGCGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGACGAGGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCGCCATGCAGCTGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rresecanscascresesasesecrecerecrececearesrecreaasecesecaresas
                                                                                                                                                                                                                                                                                                                                                                                     CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 បូ
                                                                                           Location/Qualifiers

1. .2096

Location/Qualifiers

1. .2096

7. crganism="Eucalyptus grandis"

7. crganism="Eucalyptus grandis"

Mol_type="genomic DNA"

/db_xref="taxon:71139"
          Ы
C12N15/09,A01H5/00,C07K14/415,C12N5/10,C12Q1/02,C12Q1/68,
C12N15/00,
PC C12N5/00
CC Composition and methods for the modification of gene
                                                                                                                                                                                                                                                                                                       Length 2096;
                                                                                                                                                                                                                                                                                                                                              4 ;
                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                              11;
                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                     Score 2020.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                       65.8%;
llarity 99.3%;
Conservative C
                                              C12N5/00
Composition (
expression
                                                                                                                              source
                                                                                                                                                                                                                                                                                                                            Best Local Similarity
Matches 2041; Conserv
                                                                                                       표단단
                                                                                                                                                                                                                                                                                                                                                                                     1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 761
                                                                                                                                                                                                                                                                                                                                                                                                                             41
                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                           source
                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Composition and methods for the modification of gene expression.

BD262168.

BD262168.

GCMD051168.

BD262168.

GCS2539834-A/60.

Eucalyptus grandis

SM Eucalyptus grandis

SM Eucalyptus grandis

Spermatophyta; Magnoliophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosida; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales; Myttales
                                                                                                                                                                                                                                                                                                                            2700
                                                  2460
                                                                                                                                                                                                                                                                                                                                                                  2700
                                                                                                                                                                                                                                                                                                                                                                                                           2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTTCAGTAAATCACTTCGAACA 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2096 bp DNA linear PAT 17-JUL-2003 for the modification of gene expression.
                                  GTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                                                                                                              TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                         CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                                                      ACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                               TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                           ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                                                                                CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                            ACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                           TTCAGGCCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTTTGGATTTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccecrricarcriccrccrcrcrcrcrarerrcarecrrcrrccarricaaaccrccrcaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTITITGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT
              GTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                                                                                         TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                     ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BD262168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2941
                                                  2401
                                                                                         2461
                                                                                                                              2461
                                                                                                                                                                     2521
                                                                                                                                                                                                           2521
                                                                                                                                                                                                                                                2581
                                                                                                                                                                                                                                                                                     2581
                                                                                                                                                                                                                                                                                                                            2641
                                                                                                                                                                                                                                                                                                                                                                    2641
                                                                                                                                                                                                                                                                                                                                                                                                           2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3061
              2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
BD262168
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
```

8 6 6 6

<u>ک</u> ۾

ò 셤

8 6 8 6 8 6 8 6 8

TITLE

QY 2620 ACTGCATCATGTTGGCCCACAACCCAGGCGGAAAGACACAGAAGGACTCGAGG 2679 DD 1021 ACTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGACACAGAAGGATTCGAGG 1080 DD 1021 ACTGCATCATTGGCCAAAGGCGCGGATTCAGGCGTTCCAAGTCATGGCGCTTTCGGCACTC 2739 QY 2680 CATTGGCCAAAGGGGCCGGATTCAGGGCTTCCAAGTCATGGTGCTGCGCTTTCGGCACTC 2730 DD 1081 CATTGGCCAAAGGGCCGGATTCAGGGCTTCCAAGTCATGGTGCTGCTTCGGTGCTCCTTCGTGGTACTTCGGCACTC 2730 DD 1141 ACGTCATGGAGTTCCTGAAGGCCCTTTCTCACAGTTGGTGCTCCTTCAAGGTTCT 2799 QY 2800 TGGATTTGAAAGGTGCTGAAGGCCCTTTTCTCACAGTTGGTGCTTCCAGGTTC 2869 PIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	RESULT 5 RESULT 5
Query Match 46.6%; Score 1429.6; DB 2; Length 1630; Query Match Best Local Similarity 99.0%; Pred. No. 0; 1 Best Local Similarity 99.0%; Pred. No. 0; 1 Matches 1449; Conservative 0; Mismatches 14; Indels 11; Gaps 1; Matches 1449; Conservative 0; Mismatches 14; Indels 11; Gaps 1; Db 1 CCGTTTTATTTCCTCGTTTCCTTTGCTCGAGTCTCGCGAAGAGAGAG	

```
/organism="Eucalyptus gunnii"
/organism="Eucalyptus gunnii"
/mol type="mRNA"
/mol type="mRNA"
/cultivar="EUCALYPTUS gunnii clone 832 (AFOCEL, FRANCE)"
/db_xref="taxon:3933"
/tissue type="xylem"
/tissue type="xylem"
/clone 11b="Lambda zap"
/ gene="ONT"
81. 1181
/gene="ONT"
/EC_number="2:1.1.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCT 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70
                                                                                                                                                                                                   Constant to 1452)

Trians-Pettenati, J.

Direct Submission.

Submitted (27-AUG-1993) J. Grima-Pettenati, Universite Paul
Submitted (27-AUG-1993) J. Grima-Pettenati, Universite Paul
Sabatier, Centre de Physiologie Vegetale, URA CNRS 1457, 118 Route
de Narbonne, 31 062 Toulouse Cedex, FRANCE
Location/Qualifiers
PLN 18-APR-2005
                                       A/4814

Methyltransferase.

Bucalyptus gunni; (cider tree)

Bucalyptus gunni; (cider tree)

Bucalyptus gunni; (cider tree)

Bucalyptus gunni;

Bucalyptus dunni;

Bucalyptus; Wiridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons;

cosids; Myttales; Myttaceae; Bucalyptus

1 (bases 1 to 1452)

Poeydomenge, O., Boudet, A.M. and Grima-Pettenati, J.

Poeydomenge, O., Boudet, A.M. and Grima-Pettenati, J.

Poeydomenge, O., Boudet, A.M. and Grima-Pettenati, J.

Poeydomenge from Eucalyptus

1-0-methyltransferase from Eucalyptus

Plant Physiol. 105 (2), 749-750 (1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1659 AGAGGAGAGAATGGGTTCGACCGGGTCCGAGACCCAGTGACCCCGACCCAAGTCTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   no additional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1452;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1104. .1121
|/gene="OMT"
|/inference="non-experimental evidence,
|/inference="non-experimental evidence,
|/bound_moiety="ATP"
   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4;
   1452 bp mRNA OMT mRNA for O-Methyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1314;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 96.9%;
Matches 1385; Conservative (
                       E.gunnii (
X74814
                                                                                                                                                                                            8066135
           EGOMTRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H
                                                                                                                                                                                                                                                                                           source
          LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                             PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACGICAIGGAGITICCIGAAGACGGCTIGAICTGCTCCTGTGGTGAIGITCAIGGITCT 2799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2559
                                                                                                                                                                                                                                                                                                                                                                                                                                2619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTGCATCATGTTGGCCCACAACCCAGGGGGAAAGAGAGGACACAGAAGGAGTTCGAGG 2679
                                                                                                                                                                                                                                                                                                                                CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG 2499
                                                                                                                                                                                     2320
                                                                                                                                                                                                                                    2379
                                                                                                                                                                                                                                                                                 AAGACGCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC 2439
                                                                                                                                    ACCGGGGAATGTCTGATCACTCCACATTACTATGAAGAAGATACTGGAAACATACAAGG 2260
                                                                                                                                                                                                                                                                                                                                                                                                         960
                                       2140
                                                                                      2200
                                                                                                                                                                                                                                                           780
                                                                                                                                                             99
                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                          900
                                                                                                 540
               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCCTTCGGCATACCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTCATAAAAGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTIGTIGTITITATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGT
                                                                                                                                                                                                                                                                                                                                                 CGAAGTTCCTCAAGAACTGCTAACGATGCGCTTCCCCAACAATGGAAAGGTGATCGTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                              AGTGCGTACTCCCTGTGTGTACCCAGACACGAGCGTAGCGACCAAGAATGTGATCCACTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                           CATTGGCCAAAGGGGCCGGATTTCAGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                  TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                                                                                                                                                                                                  GCTTCGAGGGCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCA
                                     CGTACGGGATGACCGCGTTCGACTATCATGGCACCCGACCGCGATTCAACAAGATCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCAGTAAATCACTTCGAACAAAA 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCAGTAAATCACTTCGAACAAA 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2860'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2800
                                                                                                                                                                                                                                                                                                                                                                                                                                         2560
                                                                                                                                                                                                                                                                                                                                                                                          2500
                                                                                                                                                                                                                                                                                                                                            2440
                                                                                                                                                                                                                                                                                           2380
                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                             2321
                                                                        481
                                                                                               2141
                                                                                                                                               2201
                                                                                                                                                                                              2261
                                                                                                                                                                                                                                                                   721
                                                                                                                       541
                                                                                                                                                                       601
                                               2081
                        421
```

ઠે 셤 ઠે

g

ઠે

g

g δ

g Š

ď ò g ò 쉱 ò

g 8

g 8

g ઠે g ઠ

g ò g ò

a õ

g ò

õ

7

음 성 음

8 6 8 6

8 & 8 &

8 B 8

8 8 8 8 8 8 8

```
/#unction="blosynthesis of lignin and other
phenylpropanoids"
/codon_start=1
/codon_start=1
/produc_L="caffeic_acid_O-methyltransferase"
/produc_L="caffeic_acid_O-methyltransferase"
/protein_id="AAB71141.1"
/db_xrefe"GI:2240207"
/translation="MGSTGNAETQLTPTHYSDEEANLFAMQLASASVLPMVLKAAIEL
DVLSIMAKKSI PHGSGAXISPABIAAQLPTTHYBDAPVNLDRVLRLLASYSVTCSIREL
DVLSIMAKSI PHGSGAXISPABIAAQLPTTHTWKCIREMYTGFBALNITUDGGIPFN
KAYGWTAFFTHGTDRFNKVPRAGSDBAPIXFOWGGGGTGA
VLSNIVAKPFSIKGINFDLPHVIEDAPIXFOWHUGGDMFVSVPRGDAIFMKWICHDW
SDEHCLKFLKNCYAALPBEHGKVIVAECTLPLSPDPSLATKGVIHIDAIMLAHNPGGKE
RTEKGFFEALAIGAGFKVPACCAFNTYVMEFLKTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Eukaryota; Viridiplantae; Streptophyta; Eukaryota; Viridiplantae; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosida; Myrtales; Onagraceae; Clarkia.

El (bases 1 to 1300)

Nucleotide Sequence of S-Adenosyl-L-Methionine:Caffeic Acid 3-O-Methyltransferase from Clarkia breweri (Accession No. AF006009) (PGR97-104)

Plant Physiol. 114, 1567 (1997)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)

El (bases 1 to 1300)
                                                                                                     2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1744
                                                                                                                                                                                                                                                                                                                                          bp mRNA linear PLN 24-SEP-1997
O-methyltransferase (COMT) mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (29-MAY-1997) Biology, University of Michigan, 830 North
University Avenue, Ann Arbor, MI 48109, USA
Location/Qualifiers
                      TACCAAG-TICTICICATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGG
                                            1271 TACCAAGCTTCTTCTCATAAAAGGAAACAATAAGAAGTGACTGTATGATGAGGCGCAAGTGG
                                                                                                        AAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTTC
                                                                                                                                CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGACGAGACCTCTTCGCCATGC
                                                                                                                                                                                          3018
                                                                                                                                                                                                              Length 1300;
                                                                                                                                                                                          ACAGAATGTGTAACGACGGCGTATATGGATGTGCCTGAATGATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 676.6; DB 4;
Pred. No. 4.4e-172;
0; Mismatches 254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .1300
/organism="Clarkia breweri"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="mRNA"
/db_xref="taxon:36903"
1. .1300
                                                                                                                                                                                                                                                                                                                                   AF006009
Clarkia breweri caffeic acid complete cds.
AF006009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 (bases 1 to 1300)
Wang, J. and Pichersky, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                AF006009.1 GI:2240206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22.0%;
ilarity 76.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="COMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .1113
/gene="COMT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Clarkia breweri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clarkia breweri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Simi
nes 859;
                                                                                                                                                1331
                      2850
                                                                                                        2909
                                                                                                                                                                                          2969
                                                                                                                                                                                                                                    1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                             AFOOGOO
LOCUS
                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                     g
                                                                                                     ò
                                                                                                                                    g
                                                                                                                                                                               ð
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                  2078
                                       2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGACTGCATCATGTTGGCCCACACCCAGGGGAAAGAGAGGAGAAACAGAAAGAGAGAGTTCGA 1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           971 AGAGTGCGTACTCCCTGTGTCCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACAT 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTGATGTGCTGCGCTTTCGGCAC 1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGC-----TTCGGCA 2849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCTTGGATTTGAAAGGTCGTGAAGGACCCTTTTCTCACAGTTGGTTTCGATTCGGCA 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAA 2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGGCTTTCGGCAC 2737
                                                                                                                                                                                                                                                                                                                                          430
                                                                                                                                                                      310
                                                                                                                                                                                                                                                                                                                                                                                                                                490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         970
                                                                                                                                                                                                                                                          GCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCAA 370
CGAGGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCT 190
                                                                                                                                                                                                                                                                                                                                                                                                            CAAGAACGAGGACTCTCCATCGCGCACTCAACTTGATGAACCAGGACAAAAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTCTCCACGGGGGAAATCGCGGCACACACCCCGACCCCAGAACCCCCGAGGCACCCGTCAT
                                                                                                                                                    CCTCTCCCCGGGGGAAGTCGCGGCCCAGCTCCCGACCCCAGAACCCCGAGGCACCCCGTCAT
                                                                                                                                                                                                                                                                                                                                              CCTCCCCGATGGTAAGGTCGAGCGGCTCTACGGCTTAGCTCCGGTGTGCAAGTTCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCGTACGGGATGACCGCATTCGAGTATCATGGCACCGACCCTCGATTCAACAAGATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGCTTCGAGGCCTCGAGACGGTGGTCGATGTCGGAGGTGGCACTGGGGCCCGTGCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-GCCCCAACGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATGATCGTTGCCAAATACCCATCGATGAAAGGGATCAACTTCGACCTGCCTCACGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAGACCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGACGCTCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCAAAGGGAGAGTCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         911 TGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACATTGGAAAGGTGATCGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTC--CTCTGTGGTGATGTTCATGG
                                                                                                                                                                                                              GCTCGACCGGATCTTCCGGCTGCTGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGA
                                                                                                                                                                                                                                                                                                  CCTCCCCGATGGCAAGGTCGAGCGCCTCTACGCCTTAGCGCCCGGTGTGCAAGTTCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                      CAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCGACTGGGGCCGTGCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGTGCGTACTCCCTGTGTAACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGACTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGA
                                                                                                                                                                   251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2796
                                          1779
                                                                                    191
                                                                                                                            1839
                                                                                                                                                                                                                1899
                                                                                                                                                                                                                                                                                                  1959
                                                                                                                                                                                                                                                                                                                                                                                      2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1211
                                                                                                                                                                                                                                                        311
                                                                                                                                                                                                                                                                                                                                          371
                                                                                                                                                                                                                                                                                                                                                                                                                                431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       851
```

8 & 8

8 6 6 6

8

ઠે

ò

8 6

```
PAT 09-JUL-2003
                                                                                                                                                         Fragaria x ananassa
Fragaria x ananassa
Bukaryora, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; Core eudicotyledons;
rosids; eurosids I; Rosales; Rosaceae; Rosoideae; Fragaria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gaggecricgagaccercercarcarercagagececarcageareare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  àààààcticaàarccatratanatatachacacacacagagcrafagagaraara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAATGGGGTTCGACCCGGAGACCCAGATGACCCCGGACCCAAGTCTCGGACGACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ceanterreceacreciaecracinacrecerecreacerecacerececeacerece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGGCAAGGTCGAGCGCTCTACGGCTTAGCGCCGGTGTGCTAGTTCTTGGTCAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGACGGGGTCTCCATCGCCGCACTCGATGATGAACCAGGACAAAATCCTCATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGATGACCGCGTTCGAGTATCATGCCACCGACCCGCGATTCAACAAGATCTTTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACGGGGGAAATCGCGGCACAGACCCCAGAACCCCGAGGCACCCGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               280 CCTAGTGATCTAGCCTCTCAGCTTCCGACCAAAAACCCCGAAGCTCCGGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400 GACGCAAAGITGAGAGGCTCTACTGTTTGGGACCTGTGTGTAAGITCTTGACCAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                        (DE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                            Schwab, W., Kaldenhoff, R. and Wein, M.
Multifunctional caffeic acid o-methyltransferase
Patent: WO 03046163-A 1 05-JUN-2003;
Bayerische Julius-Maximilians-Universitaet Wuerzburg
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1876;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 676; DB 2;
Pred. No. 5.9e-172;
0; Mismatches 250;
                                                                                                                                                                                                                                                                                                                                                                                                   ananassa"
DNA"
                                                                     DNA
                                                                 1876 bp
1 from Patent WO03046163.

    1876
    organism="Fragaria x /mol_type="unassigned /db_xref="taxon:3747"

                                                                                                                               GI:32485193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 22.0%;
Best Local Similarity 77.0%;
Matches 850; Conservative
                                                                                                                               AX773024.1
                                                                     AX773024
Sequence 1
AX773024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      160
                                                                                                                                                                                                                                                                                                                                                                  FEATURES
SOURCE
                                RESULT 9
AX773024
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                   KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2694
                                                                                                                                                                                                                                                                                                                                                                                                                                2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGTTGG 2634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCCATCAATGAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCC 2394
                                                                                                                                                                                                                                                                                                                                                    2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              979
                                                                                                                1855
                                                                                                                                                                                              1915
                                                                                                                                                                                                                                                                        1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    139
                                                                                                                                                       199
                                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                                                                                             319
                                                                                                                                                                                                                                                                                                                                                                                         379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     439
79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Acticatacicaciacis de la reconstrucció de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconstrucción de la reconst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u> cresatrcaasectrcaastraceaterrereccrrcaacactracercaresarrcc</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ratrcargaagriggatrrgccacgacriggagcgacgagggcacriggaaggriccrigaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       920 icicicidacccadarcredccaccaagagaagagarccararccarcargrag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCACAACCCAGGGGAAAGAGAGACACACAGAAGGAGTTCGAGGCATTGGCCCAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTTCGAGTATCATGGCACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGGCGTTCCAAAGGGAGATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGAGCGCTCTACGCCTTAGCGCCCGGTGCAAGTTCTTGGTCAAGAACGAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                          TCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAAGCTGGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACG
                                                                                                                  TCGAGATCATGGCCAAG-----GACGGGCCGGGCGCGTTCCTCCACGGGGAAA
                                                                                                                                       GGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGGGACCTCCCCGGATGGCAAGG
                                                             TCGCGGCACAGCTCCCGACCCCAGAACCCCGAGCACCCGTCATGCTCGACCGGATCTTCC
CAGAGACCCAATTAACTCCGACCCATGTCTCCGACGAGGAAGCCAATCTGTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rcadadecectiadergariadietreadadietegaerri 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2216
                                                                                                                                                                                                                                                                                1916
                                                                                                                                                                                                                                                                                                                                                                                                                                        2036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2156
                                                                                    80
                                                                                                                                                             140
                                                                                                                                                                                                    1856
                                                                                                                                                                                                                                           200
                                                                                                                                                                                                                                                                                                                       260
                                                                                                                                                                                                                                                                                                                                                            1976
                                                                                                                                                                                                                                                                                                                                                                                                 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2096
                                               1745
```

6 B 6 B 6 B 6

8 6 8 6 8 6 8 6

8 6

셤 ò

1845

219

279

1785

1905

339

2085

519

2025

459

1965

399

2145

579

2205

639

2265

임

ઠ

6 B 6

8 6 8

QQ

상 원

ద

ઠે

Š

669

2325

279

1905

g

ઠે 쇰 8 셤

8 S

339

1785

219

; ;

4,

2025

459

399

2085

519

2145

2205

579

639

2265

669

2325

759

2384

819

2444

879

999

Thu

g

8

음 장

원

8 8 &

```
TAFDYHGTDPRENKVFNKGMADHSTITMKKILETYKGFEGLKSIVDVGGCTGAVVMI
SYKYPSIKGINFDLEHVITBAPAVYFOVOHVGGDMFVSYPKGNAIFMKWICHDWSDBHC
IKFLKNCYAALPDDGKVILABCILPVAPDTSLATKGVVHMDVIMLAHNFGGKERTTEQE
FEALAKGSGFGGIRVCCDAFNTYVIEFLKKI
                                                                                                                                                                                               AGAATGGGTTCGACCGGCTCCGAGACCCCAGATGACCCCGACCAGTCTCGGACGACGAG 1725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGGACCTCCCC 1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTACTCCCTGTQTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC 2624
ERLYCLGPVCKFLTKNEDGVSTAALCLMNQDKVLVESWYHLKDAVLDGGTPFNKAYGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGAGGAGTGACGACCATTGCGCGAAG 2504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                400 GACGCCAAAGTTGAGAGGCTCTACTGTTTGGGACCTGTGTGTAAGTTCTTGACCAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                                                                                            GCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTCC
                                                                                                                                                                                                                                                                                                                                                                       GCCATCGAGCTCGACCTCTTGGAGATCATGGCCAAGGCCGGACCCGGCTCTTTCCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ccraérearcraécerereaecreceaecaaeaaececeaaecrecereareereae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cenarectroscentriosceascialenterecaricaanectecteariscenarecentece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGGCAAGGTCGAGCGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAGATGGCGTCTCTATTGCTGCTCTCTGATGAACCAGGACAAGGTCCTCGTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u> aecregiarcarricaaegarecaerrerrearegreegarrecarrraacaaegecrar</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTTTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCCACTGGGGCCGTCAGCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTTCCAAGTACCCTTCGATCAAGGCCATCAACTTCGACTTGCCTCATGTTATCGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTCCTCAATATCCTGGTGTTCAACACGTTGGAGGGGGACATGTTTGTAAGTGTACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | TICCICAAGAACIGCIACGAIGCGCTICCCAACAAIGGAAAGGIGAICGIIGCAGAGGIGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rrcrigaadarcrecracecrecerrecadacearecaaagrearrerrecreageree
                                                                                                                       Length 1876;
                                                                                                                                                           Indels
                                                                                                                                                             250;
                                                                                                                     Score 676; DB 4; I
Pred. No. 5.9e-172;
0; Mismatches 250;
                                                                                                                       1 22.0%;
Similarity 77.0%;
50; Conservative
                                                                                                                                                           850;
                                                                                                                                                                                                1666
                                                                                                                                                                                                                                                                    1726
                                                                                                                                                                                                                                                                                                         160
                                                                                                                                                                                                                                                                                                                                             1786
                                                                                                                                                                                                                                                                                                                                                                                220
                                                                                                                                                                                                                                                                                                                                                                                                                    1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                      280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2565
                                                                                                                                                                                                                                  103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       760
                                                                                                                           Query Match
                                                                                                                                              Local
                                                                                                                                            Best Loca
Matches
                                                                                         DRIGIN
                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/product="0-methyltransferase"
/protein_id="AAP28353.1"
/db_xref="GI:676443"
/trānslation="MGSTGETQMTPTHVSDEEANLFAMQLASASVLPMVLKAAIELDL
LEIMAKAGPGSFLSFSDLASQLPTKNPEAPVMLDRMLRLLASYSILTCSLRTLPDGKV
                                                                                                                                                                                                                                                                                                                                                                                2684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-JAN-2000
                                                                                                                                                                                                                                                                                                                                             1000 ATTCTTCCTGTTGCACAGACACTAGCCTTGCCACCAGGAGTTGTCCATATGGATGTG 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1179
                    GTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC 2384
                                                                                                                                                               GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAG 2504
                                                                                                                                                                                                                                                                    666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fragaria x ananassa
Fragaria x ananassa
Bukaryoria, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosida; eurosida I; Rosales; Rosaceae; Rosoideae; Fragaria.
1 (Dases 1 to 1876)
Kaldenhoff,R., Wein,M. and Schwab,W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AF220491 1876 bp mRNA linear PLN 27-JAN-200
Fragaria x ananassa O-methyltransferase (omt1) mRNA, complete cds.
AF220491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fuer
                                           GGAAATGCAATTTTCATGAAGTGGATATGTCACGACTGGAGTGACGAGGGTTGCATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                   GCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGGCGTTCCAAAG
                                                                                                                                                                                                                                                                      rictrigaadaacriccracicciriccagacgariccaaagrigarricrigcriagic
                                                                                                                                                                                                                                                                                                         GTACTCCCTGTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC
                                                                                                                                                                                                                                                                                                                                                                                ATCATGTTGGCCCACACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCAAAGGGGCCGCATTTCAGGGCTTCCAAGTCATGTGCTGCGCCTTTCGGCACTCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTAAGGGTTCTGGATTCCAAGGCATTCGCGTCTGCTGTGATGCTTTCAACACCTATGTC
                                                                                                                                                                                                                                  TTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Auguster (1977). Wein, M. and Schwab, W. Direct Submission Submitted (03-JAN-2000) Botanik I, Julius-von-Sachs-Institut Biowissenschaften, Julius-von-Sachs-Platz 2, Wuerzburg 97082, Germany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          O-methyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ananassa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kaldenhoff,R., Wein,M. and Schwab,W.
Isolation and characterization of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .1876
/organism="Fragaria x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="mRNA"
/cultivar="Elsanta"
/db_xref="taxon:3747"
1. _1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGAGTTCCTGAAGACCGCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:6760442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="omt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        106. .1203
/gene="omt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 1876)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       strawberry
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF220491.1
                                                                                         2385
                                                                                                                                                               2445
                                                                                                                                                                                                                                    2505
                                                                                                                                                                                                                                                                                                         2565
                                                                                                                                                                                                                                                                                                                                                                                                                  1060
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1120
                                                      760
                                                                                                                           820
                                                                                                                                                                                                880
                                                                                                                                                                                                                                                                      940
                                                                                                                                                                                                                                                                                                                                                                                2625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF220491
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
```

셤

요 ઠે

음 Š

8

```
PLN 01-SEP-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     968 ACAACCTTGGCGGCAAAGAGGAGGGAGGAGTTTGAAGCCTTGGCTAAGGTTCTG 1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acacia mangium x Acacia auriculiformis
Acacia mangium x Acacia auriculiformis
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids I; Fabales; Fabaceae; Mimosoideae; Acacieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2637
                                                                                                                                                                                                                                      2338
                                                                                                                                                                                                                                                                                                                    2397
                                                                                                                                                                                                                                                                                                                                                                                                  2457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2517
                                                                                                                                                           2278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sukganah, A., Wickneswari, R. and Choong, C.Y.
Full length of Acacia manglum x Acacia auriculiformis hybrid cDNA
clones encoding cinnamoyl-CoA reductase (CCR) and caffeic acid
O-methyltransferase (COMT)
                                                                             2218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              967
                                                                                                                                                                                                                                                                                                                                                                                                                                       787
                                                                                                                                                                                                                                                                            667
                                                                                                                                                                                                                                                                                                                                                        727
                                     487
                                                                                                                 547
                                                                                                                                                                                                 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1028 daircchaddcaircacdicracrdraardcirirchachccrardichirdadiricira
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                848 dcirkcicideciriccaakcakidecakasidarircirdecidagidekiricircirdiri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2578 ACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATTGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            908 caccadachadchadcchadcadadagadhadicahahadangrahahadada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAACCCAGGGGGAAAAGAAGAACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATITICAGGGCTICCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTACGATGCGCTTCCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGACGCCCCACCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                       TCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACT
                                                                                                                                                         ACTCCACCATTACTATGAAGATACTGGAAAACATACAAGGGCTTCGAGGGCTCGAAGA
                                                                                                                                                                                CCGTGGTCGATGTCGGAAGGCGGCACTGGCGCCGTGCTCATCGTTGCCAAATACC
                                                                                                                                                                                                                                                               CTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAAGCGAAAAGGGAGATGCCATTT
                                                                                                    TGAAAGATGCGGTTGAAGGCGGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGT
                         TCGAGTATCATGGCACCGGACTCCGAGTCCTTTAACGGGGGAATGTCTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and Natural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DQ001169 MRNA linear Acacia auriculiformis caffeic acid O-methyltransferase mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Theres 1 to 1408)

Choose, C.Y., Wickneswari, R. and Sukganah, A.

Direct Submission

Submitted (07-APR-2005) School of Environmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DQ001169
DQ001169.1 GI:68159361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 1408)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2758 AGACCGCTTGA 2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAGATCTGA 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2458
                                                                                                                                                                         2219
                                                                                                                                                                                                                                                                                                                                   2339
                                                                                                                                                                                                                                                                                                                                                                                                                  2398
                                                                                                                                                                                                                                                     2279
                                                                                                                                                                                                                                                                                             809
                                                                                                                                                                                                                                                                                                                                                                          668
                                                                                                                                                                                                                                                                                                                                                                                                                                                        728
                                                      428
                                                                                            2159
                                                                                                                                  488
                2099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DQ001169
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                         ò
                                                                                                                                                                                                     a
                                                                                                                                                                                                                                          8
                                              요
                                                                                              8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recreacchaerracrecarecreacyceaccreaceaeceaeceareceangered 1978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCATCGCCGCACTCAACTTGATGAACAGGACAAAAATCCTCATGGAAAGCTGGTATTACC 2098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1679 CCGGCTCCGAGACCCCAGATGACCCCGAGCCAAGTCTCGGACGACGAGGCGAACCTTCG 1738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127
                                                                                                                                                                       2684
                                                                                                                                        GCCAAAGGGGCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTC 2744
                                                                                                                                                                                                                                                                                                                                                                09-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fragaria x ananassa
Fragaria x ananassa
Bukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids I; Rosales; Rosaceae; Rosoideae; Fragaria.
                    ATTCTICCIGITGCACCAGACACTAGCCTIGCCACCAAGGGAGTIGICCATAIGGAIGIG 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCGGCTCTACGGCTTAGCGCCGGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccaccescalatercadareacreceacecarerereceaceagaagecaacereree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCATGCAGCTGGCGAGGGCCTCCGGTGCTCCCCATGGTCGTAAAGGCCGCCGATCGAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTCCTCGAGATCATGGCCAAGGACGGCGCGCGTTCCTCTCCACGGGGAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGCACAGCTCCCGACCCCAGAACCCCGAGCCACCCGTCATGCTCGACCGGATCTTCCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                            ATCATGTTGGCCCACACCCAGGCGGGAAAAGAGGACACAGAAGGAGTTCGAGGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (<u>DE</u>)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nucleotides 106
ID No. 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1098;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Schwab, W., Kaldenhoff, R. and Wein, M.
Multifunctional caffeic acid o-methyltransferase
Patent: WO 03046163-A 3 05-JUN-2003;
Bayerische Julius Maximilians-Universitaet Wuerzburg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22.0%; Score 675.8; DB 2;
.larity 76.8%; Pred. No. 7.5e-172;
Conservative 0; Mismatches 252;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1. 1098
1. 1098
| Locadian="Fragaria x ananassa"
| mol_type="unassigned DNA"
| db_xref="texon:3747"
| nofe="sequence corresponds to nuse of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence of the presence o
                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                  AX773026 1098 bp
Sequence 3 from Patent WO03046163.
AX773026
AX773026.1 GI:32485194
                                                                                                                                                                                                                              2745 AIGGAGIICCIGAAGACCGCIIGA 2768
                                                                                                                                                                                                                                                     || ||||| || |||||| ATTGAGTTCTGA 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Sim
Matches 838;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                 1060
                                                                                                                                                         2685
                                                                                                                                                                                            1120
                                                                                                                                                                                                                                                                          1180
                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                     RESULT 11
AX773026
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
```

ORIGIN

qq ઠે g ઠે

g ò

g ò

유 ò 요 δ

ð

```
db xref="taxon:197613"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="RcOMT2"
79. .1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AB086104.1 GI:32440932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="RcOMT2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16233496
                 2398
                                                                                                                                                                                                                                                                      2638
                                                                               2458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AB086104
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                        셤
                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                           셤
                                          셤
                                                                                                      셤
                                                                                                                                          ઠે
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                              ò
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2158
                                                                                                                                          /codon_start=1
/product="caffeic acid O-methyltransferase"
/protein_id="AAV86351.1"
/db_xref="G1:60159362"
/translation="MOSAGETQITPTHVNDEEANLFAMQLASASVLPMILKSALELDLLEINARAGPNAQLSPSDIASQLPTKNPDAAVMLDRMWRLLACYNVLSSSLRTLPDGKI
                                                                                                                                                                                                                                                                                                                                                                                                                 1738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2397
                                                                                                                                                                                                                                                    TSFEYHGKDARFNKVFNKGMADHSTITMKÄILETYTGFEGLKSLVDVGGGTGAVINTI
VSKYPSIKGINFDLEHVIEBABFPGVEHVGGDMFVSYPKADAVFMKMICHDWSDEHC
VKFLKNCYDALDEDRSVIVAECILPVAPDSSLATKGVVHIDVIMLAHNFGGKERTEKE
FEALAKGAGFQGFRVCCSAFNSYIMEFLKKP"
                                                                                                                                                                                                                                       ERLYGLAPVAKYLVKNEDGVSIAPLNLMNQDKVLMESWYYLTETVLEGGIPFNKAHGM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCG 1798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTCCTCGAGATCATGGCCAAGGACGGGCCGGCGCGTTCCTCTCCACGGGGGAAATCG 1858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATC 2218
                                                                                                                                                                                                                                                                                                                                                                                                                                              138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  738
                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCCGGCGAGACTCAGATAACCCCTACCCATGTCAACGACGAGGAAGCCAACCTCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTCCACCATCACCATGAAGAAGATTCTCGAGACCTACACCGCTTCGAGGCCTCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTCCATTAAGGGCATTAACTTTGACCTGCCCCATGTCATTGAAGAGGCTCCTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                               CCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccariccacricciccacciccirccirccaricaritaricarancaccicricaacring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTTGGCCTGCTACAACGTCCTCAGCTCCTCCCTCCGAACCCTCCCCGACGGCAAGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             crarcecrecaecreargaarcagacaagagerecreargaaggerecracracr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGACAGAGACAGTTCTGGAAGGAGGGATTCCATTCAACAAGGCACATGGCATGACATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rrgagraccacceccaaagargccaegricaacaaggrerrraacaaeggcaregcceacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGTGGTCGATGTCGGAGGCGCCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                crercercearercegrescescacescescescercareaceacearescercraastrace
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cereceaectreceaecaaeaaececeaecececerearecreaececarearecee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAGGCTCTATGGCCTCGCCCCCCGTCGCTAAATACTTGGTCAAGAACGAAGATGGCGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGT
   늉
                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                 organism="Acacia mangium x Acacia auriculiformis"
Sciences, Universiti Kebangsaan Malaysia, Faculty nd Technology, Bangi, Selangor 43600, Malaysia Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                  ä
                                                                                                                                                                                                                                                                                                                                                   Length 1408;
                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                 21.9%; Score 671.6; DB 4; 75.8%; Pred. No. 9.8e-171;
                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 269;
                                                                            /mol_type="mRNA"
/db_xref="taxon:54177"
                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 75.8
Matches 844; Conservative
                 Science and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           499
                                                                                                                                                                                                                                                                                                                                                                                                               1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2039
                                                                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1739
                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                             CDS
                                FEATURES
                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
```

```
neverve 1393 bp mRNA linear PLN 21-JAN-2006 Rosa chinensis var. spontanea RCOMT2 mRNA for caffeic acid O-methyltransferase, complete cds.
2457
                                                                                                                           2517
                                                                                                                                                                                                                                                      2577
                                                                                                                                                                                                                                                                                                                                                                                     2637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1039 ATAACCCAGGTGGCAAAGAGAGACTGAGAAAGAGTTTGAGGCTCTGGCCAAGGGTGCTG 1098
                                                                                                                                                                                                                                                                                                                      978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tobases 1 to 1393)

Mu,S. and Maranabe,N.

Direct Submission

Submitted (03-JUN-2002) Nacharu Watanabe, Shizuoka University,

Department of AppliedBiological Chemistry, Faculty of Agriculture;

836 Ohya, Shizuoka, Shizuoka 422-8529, Japan

(E-mail:acnwata@agr.shizuoka.ac.jp, Tel:81-54-238-4870,

Fax:81-54-238-4870)

Location/Qualifiers
                                                            858
                                                                                                                                                                                       918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rosa chinensis var. spontanea
Rosa chinensis var. spontanea
Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons; core eudicotyledons;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /function="catalyzes the S-adenosylmethionine-dependent O-methylation of cafffeic acid to form ferulic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wu,S., Watanabe,N., Mita,S., Ueda,Y., Shibuya,M. and Ebizuka,Y.
Two O-methyltransferases isolated from flower petals of Rosa chinensis var. spontanea involved in scent biosynthesis
J. Biosci. Bioeng. 96 (2), 119-128 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1099 GCTTCCAAGGTTTCCGTGTTTGTTGCTCTGCTTTCAACTCCTATATCATGGAATTCCTCA
                                                                                                                           TCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACT
                                                                                                                                                                                                                                                      2518 GCTACGATGCGCTTCCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGT
                                                                                                                                                                                                                                                                                                                      919 GCTACGACGCACTGCCGGAAAATGGAAAGGTGATAGTGGCGGAGTGCATTCTTCCGGTGG
                                                                                                                                                                                                                                                                                                                                                                                     2578 ACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     979 CTCCGGACTCGAGCCTGGCGACGAAGGGGGGTGGTCCACATTGACGTCATCATGCTGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGA
   CTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTT
                                    859 TCATGAAGTGGATATGCCATGACTGAGGAGGACGAGCACTGCGTGAAATTTCTCAAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rosids; eurosids I; Rosales; Rosaceae; Rosoideae; Rosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="caffeic acid O-methyltransferase"
/protein_id="BAC78827.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   spontanea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tissue type="rose flower petals" 1.1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2758 AGACCGCTTGATCTGCTCCTCTGTGGTGATGTTC 2791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Rosa chinensis var.
/mol_type="mRNA"
/varlety="spontanea"
```

g ઠે

à

ð

```
2745
                                                                                                                                                                            2805
                                                                                        2685
    2565
                                             2625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                     LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                RESULT 14
RCH439740
                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                           g
                                                                                                      QQ
                                                                                                                                 ò
                                                                                                                                                   8 8
                                                                용
                                                                                      ò
                      셤
                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TICTCAAAAACTGCTACGATGGGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC 2564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTC 2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2266 GAGGGCCTCGAAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATC 2325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GITGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC 2384
                                                                                                                                                                                                                                                                                                                                                                 2025
                                                                                                                                                                                                                                                                                                                                                                                                           2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gggargaccigogranciarcicaccaccicoscocarroaacaacarrorranda 2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            972
                                                                                                                                                                                                                                                                                                                     CGGATCTTCCGGGTGCTGGCCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCC 1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 792
                LEIMAKAGPGAFLSPNDLASQLPTKNPEAPVALDRMIRLILASYSILTYSIRTUPDGKV
ERLYGLGPVCKFLTKNEDGVSIAALCLMNQDKVLVESWYHLKDAVLDGSIPPKKAYGM
TAFDYHGTDPRRNKVFNKGMADHSTITNKKILLETYKGFEGITSIVUVGGGTGAVVNMI
VSKYPSIKGINFDLPHVIEDDAQYPGVQHVGGDMFVSVPKGDAIFMKNICHDWSDEHC
IKKFLKNCYAALPDHGKVILGEGILPVAADTISLATKGVVHIDVIMLAHNPGGKERTGQE
PEALAKGSGFGGIRVACNAFNTYVIEFLKKI"
                                                                                                                                                1725
                                                                                                                                                                                         1785
                                                                                                                                                                                                                                   1845
                                                                                                                                                                                                                                                                           1846 ACGGGGGAAATCGCGGCACAGACCCCAGAACCCCGAGGCACCCGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      373 GACGGCAAAGTIGAGAGGCTCIACGGITIGGGACCIGIGIGAAATICTIGACCAAGAAC 432
                                                                                                                                                                                                                                                                                                 312
                                                                                                                                                                                                                                                                                                                                   translation="MGSTGETQMTPTQVSDEEANLFAMQLASASVLPMVLKAAIELDL
                                                                                                                          7
                                                                                                                                                                  AAATGGGTTCAACCGG---CGAGACTCAGATGACTCCGACCCAAGTCTCCGAGGAGA 132
                                                                                                                                                                                                             192
                                                                                                                                                                                                                                                        252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dadddciricacardcarcdradardreddaddeddacddaddacardradaradard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               drincnaagnaccricgancaaggcancaachtraachrickachgrangancaadan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCCCACCCTTCCTGGTCAAGGACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGGACGGCGTCTCCATCGCCGCACTTGATGAACCAGGACAAAATCCTCATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                       GATGGCAAGGTCGAGCGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAAC
                                                                                                                                              1666 AGAATGGGTTCGACCCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGACGAG
                                                                                                                                                                                                        gecaregagaregaceregagaregaeceaagaceggeegegreree
                                                                                                                                                                                                                                                                                         GCGAACCTCTTCGCCATGCAGCGCTCCGTGCTCCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                                                       Gaps
                                                                                                                            4.;
                                                                                                     Length 1393;
                                                                                                      Score 664; DB 4; Length 13
Pred. No. 1.1e-168;
0; Mismatches 285; Indels
'db_xref="GI:32440933"
                                                                                                        21.6%;
illarity 74.8%;
Conservative 0
                                                                                                                      Similarity
                                                                                                                                 859;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2146
                                                                                                                                                                                                                                                                                                                                                                        1966
                                                                                                                                                                                                                                                                                                                                                                                                                  2026
                                                                                                                                                                                                                                                                                                                                                                                                                                       433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 493
                                                                                                                                                                                                                                                                                                                             1906
                                                                                                                                                                                                1726
                                                                                                                                                                                                                                         1786
                                                                                                                                                                                                                                                                                                         253
                                                                                                                                                                           9/
                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                               193
                                                                                                            Query Match
                                                                                                                         Best Local
                                                                                                                                  Matches
                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                        g
```

```
/protein_id=CAD29457.1"
/protein_id=CAD29457.1"
/db_xref="GG1-27527920"
/db_xref="GG1-27527920"
/db_xref="GG1-27527920"
/db_xref="InterPro:IPR001051"
/db_xref="InterPro:IPR001051"
/db_xref="InterPro:IPR001051"
/db_xref="InterPro:IPR001051"
/db_xref="InterPro:IPR001051"
/db_xref="InterPro:IPR001051"
/db_xref="InterPro:IPR001051"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xref="InterPro:IPR001050"
/db_xr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biosynthesis of the major scent components 3,5-dimethoxytoluene and 1,3,5-trimethoxybenzene by novel rose O-methyltransferases PEBS Lett. 523 (1-3), 113-118 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RCH439740 1339 bp mRNA linear PLN 12-JAN-2006
Rosa chinensis mRNA for caffeic acid O-methyltransferase (comtl
gene).
                                                                                                                                                               2684
                                                                                                                                                                                                                                                   1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicotyledons, rosids, eurosids I, Rosales, Rosaceae, Rosoideae, Rosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 1339)
Cock,J.Mark.
Direct Submission
Submitted (125-Mar.
07 69364, Françe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Magnard, J.L.
Cock, M. and
GTACTCCCTGTGTACCCGAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC
                                                                                                                                                                                                                         GCCAAAGGGGCCGGATTTCAAGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCATGTTGGCCCACAACCCAGGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/product="caffeic_acid_O-methyltransferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scalliet, G., Journot, N., Jullien, P.F., Baudino, S., Channeliere, S., Verne, P., Dumas, C., Bendahmane, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AJ439740
AJ439740.1 GI:27527919
Caffeic acid O-methyltransferase; comtl
Rosa chinensis
Rosa chinensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Rosa chinensis"
/mol_type="mRNA"
/cultivar="Old Blush"
/db xref="taxon:74649"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52. .1149
/gene="comt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene="comt1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1213 GTCATAAG 1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGAAAGG 2812
```

PLN 18-APR-2005

```
ERLYGIGEPUCKFLITKHEETUS ELEMNODEVALLESWYHIKDAVLEGGIPPIKAYGM
TAFEYHGTDPRFNKVFNRGMADHSTITMKKILETYKGFEGLTSVVDVGGGTGAVLNMI
VSKYBSIKTAINPDLHHVIBDAPQYPGVEHVGGDMFVSVPKGDAIFMKWICHDMSDEHC
LKFLKNCYAALPDMGXVILGECILEVAPDSSLATKGVVHIDVIMLAHNPGGKERTEGE
PQALAKGAGFGFNVACSAFNTYVIEFLKKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; eurosids I; Rosales; Rosaceae; Amygdaloideae; Prunus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A vector P. Pujgdomenech, P. Direct Submission Submission Submitted (05-DEC-1994) P. Pujgdomenech, Dept. Genetica Molecular CID-CSIC, Jordi Girona 18-26, 08034 Barcelona, SPAIN Location/Qualifiers
                 ATCATGTTGGCCCACAACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTG
                                    GCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTC
                                                                                                         Garcia-Mas,J., Messeguer,R., Arus,P. and Puigdomenech,P. The Electronic Plant Gene Register Plant Physiol. 108 (3), 1341-1343 (1995)
                                                                                                                                                                                                                                                             ווהטסמי 1268 bp mRNA linear
P.amygdalus mRNA for caffeic O-methyltransferase.
X83217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 651.8; DB 4;
Pred. No. 2.4e-165;
0; Mismatches 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. 1268 | /organism="Prunus dulcis" | /organism="Prunus dulcis" | /wol type="mRNA" | /cultivar="Texas" | /db xref="taxon:3755" | /clone="80MT"
                                                                                                                                                                                                                                                                                                                  X83217.1 GI:602587
caffeic acid O-methyltransferase.
Prunus dulcis (almond)
Prunus dulcis
                                                                                                                                                                                 Arceartrctraagaagarcica 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="root"
/clone_lib="root cDNA"
                                                                                                                                                   ATGGAGTTCCTGAAGACCGCTTGA 2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .1268
/gene="comt1"
18. .1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="comt1"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tch 21.2%;
al Similarity 75.7%;
820; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 1268)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Rest Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12228545
                                                                                                                                                   2745
                   2625
                                                                                    2685
                                                                                                                                                                                     1126
                                                                                                                                                                                                                                                                                     DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                      RESULT 15
                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                      PACOMT1
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                   d
                                          g
                                                                                  ò
                                                                                                             유
                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
TAFDYHGTDPRFNKVFNKGMADHSTITMKKILETYKGFEGLTSIVDVGGGTGAVVNMI
SYRYBSIKGINFDLEHVIDEDAQYPGYOHVGGDMFVSYPKGDAIFMKNICHDNSDEHC
LKFLKNCYAALPDNGKVILGECILPVAPDTSLATKGVVHIDVVMLAHNPGGKERTEGE
FEALAKGSGFQGIRVACNAFNTYVIEPLKKI
                                                                                                                                                                                                                                                                                                                                                                            1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2564
                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGAACCTCCCC 1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGGCAAGGTCGAGGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAAC 2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTC 2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTCTGCCGGTAGCACCGGACACTAGCCTCGCCACCAAGGGAGTTGTCCATATCGACGTG 1005
                                                                                                                                     ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAA 2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG 2444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2565 GTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC 2624
                                                                                                                                                                                                                                                                                                                                                                                             CCTAATGACCTCTCAGCTTCCGACCAAGAACCCCGAAGCTCCAGTCATGCTTGAC 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  945
                                                                                                                                                                                                    AAAATGGGTTCAACCGG---CGAGACTCAGATGACTCCGACCCAAGTCTCCGACGAGAA 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGATGCTTCGCCTTCTGGCCAGCTACTCCATTCTAACCTACTCCTTGCGTACACTTCCG 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGGCCTCACATCCATCGTTGATGTCGGAGGCGCACCGGAGCTGTTGTTAACATGATC 705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTCTAAGTACCCTTCGATCAAGGCATCAACTTTGACTTGCCTCATGTGATCGAAGAT 765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTCCTCAATATCCTGGTGTGCAACATGTTGGAGGGGACATGTTTGTAAGTGTACCGAAA 825
                                                                                                                                                                                                                                                                                                                                        eccarreagerecacererregagarearegeccaagecegaecegegegreereree
                                                                                                                                                                                                                                                                                                                                                                            ACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGATGGTCTCCATTGCTGCTCTCTGCTCATGAACCAAGACAAGGTCCTCGTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAATGGCTGACCACTCCACCATTACCATGAAAAAATCCTTGAGACTTATAAAGGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAG
                                                                                                                                                                                                                                        GCGAACCTCTTCGCCATGCAGCTGGCGCCTCCCGTGCTCCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                                                                      GCCAACCTCTTCGCCATGCAACTCGCCAGCGCCTCCGTCCTCCCCATGGTTCTCAAAGCC
                                                                                                                                                                                                                                                                                                         GCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACGCGAAAGTTGAGGCCTCTACGGTTTTGGGACCTGTGTGTAAATTCTTGACCAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTGGTATCATCTAAAGCATGCAGTTCTTGATGGTGGGGATTCCATTTAACAAGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    deaatreactrectriticalitaceargeaactreacetreaatreaacaagetricaacaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rtcrrgaagaarrdcrargcgccrrccagacaargggaagrgarrcrrggrgagrgc
                                                                                                                                       Gaps
                                                                                                                                     4 ;
                                                                                                    Length 1339;
                                                                                                                                   Indels
                                                                                                  Score 663.2; DB 4;
Pred. No. 1.9e-168;
0; Mismatches 258;
                                                                                                    21.6%;
76.3%;
                                                                                                                                   Conservative
                                                                                                                    al Similarity
842; Conser
                                                                                                                                                                                                                                                                                                                                                                          1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2505
                                                                                                                                                                     1666
                                                                                                                                                                                                                                                                                                         1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   946
                                                                                                                                                                                                      49
                                                                                                                                                                                                                                                                      106
                                                                                                                                                                                                                                                                                                                                          166
                                                                                                                                                                                                                                                                                                                                                                                                             226
                                                                                                                                                                                                                                                                                                                                                                                                                                              1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 826
                                                                                                      Match
                                                                                                                     Local
                                                                                                                     Best Loca
Matches
                                                                                                      Query
                                                                    DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         දු පු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 & 8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                  д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      성 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            કે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                       ò
                                                                                                                                                                                                 g
                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                 ò
```

ij

1;

Length 1268;

Search completed: November 1, 2006, 11:25:37 Job time : 17542.9 secs

1113 TGA 1115

д

	1747 CTGGCGAGCGCCTCCGTGGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1806	1807 GAGATCATGGCCAAGGACGGGCGCGTTCCTCTCCACGGGGGAAATCGCGCACAG 1866 	1867 CICCCGACCCAGAACCCCGACCACGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926	AGCTACTCCGTGCTCACGTGCACCTCCGCGACGCCCCCGATGGCAAGGTCGAGGGCTC		1987 TACGGCTTAGCGCCGGTGCAAGTTCTTGGTCAAGAACGAGGGGGTCTCCATCGCC 2046 	2047 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT 2106	21	GCAGTT	2167 CATGGCACCGCGCATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC 2226	Ċ	2227 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACGTGGTC 2286 	2287 GAIGICGGAGGCGGCGCGGCGCGCGCGCGGGAGGAGGGCGAATACCCATCAATG 2346		2347 AAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGACGCCCCCTCCTTCTGGGGTC 2405 2347 AAAGGGATTGAGGTTGCCTCATGAAGATGCTCCTCAATATCCCGGTGTG 752		753 GAGCATGTTGGGGGGAGACATGTTTGTAAGTGTTCCAAAAGGAGATGCAATTTTCATGAAG 812	2466 TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCGTACGAT 2525	GEGETTECCAACAATGGAAAGGTGATGCAGAGTGCGTACTCCCTGTGTACTCCCAGAC 25	932			2646 GGCGGBAAGAGACACAGAAGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG 2705	507	2706 GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGCAGATTCCTGAAGACCGCT 2/85	າ	2766 TGA 2768
Db	oy B	ç da		8 &	qa	b d	<i>ĭ</i>	8 8			qo	۶ و	ò	qq	රු සි	3 &	Д	કે ક	8 8	οp	δ	đ	δ	qq	λο :	gn	ờ,

```
GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                     Copyright
```

-	
mode	
æ	
using	
search,	
nucleic	
'	
nucleic	
Ö	

October 31, 2006, 23:17:03 ; Search time 1298.78 Seconds (without alignments) 16480.672 Million cell updates/sec ...0 Run

1 agcaccatcagcaaaaaata........acttcgaacaaaaaaaaa 3070 US-10-702-319A-113 3070 Perfect score: Sequence:

5244920 seqs, 3486124231 residues Gapop 10.0 , Gapext 1.0 Searched:

IDENTITY NUC

Scoring table:

10489840

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Total number of hits satisfying chosen parameters:

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

N_Geneseq_8:* Database

geneseqn2003cs:* geneseqn2001bs:*
geneseqn2002as:*
geneseqn2002bs:*
geneseqn2003as:* geneseqn2003ds:* geneseqn2004as:* geneseqn2004bs:* genesequi980s:* genesequi990s:* genesequ2000s:* genesequ2001as:* geneseqn2003bs:* geneseqn2005s:* geneseqn2006s: Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Abk17109 Eucalyptu	Adh75529 Eucalyptu	Adw80563 E. grandi	AAC62810 O-mecnyl Abk12075 Encalvoru	Adh75476 Eucalyptu	Adw80510 E. grandi	Aaa68014 Eucalyptu	Add41764 O-methyl	Aal60735 Strawberr	. Aac62762 O-methyl	Abk17027 Eucalyptu	Adh75428 Eucalyptu	Adw80462 E. grandi	Abk48067 cDNA enco	Add93899 Quaking a	Aax26295 Aspen bis	Aaq38448 pPLC4 cod
SUMMARIES	ΙD	ABK17109	ADH75529	ADWBUS63	AAC62810	ADH75476	ADW80510	AAA68014	ADD41764	AAL60735	AAC62762	ABK17027	ADH75428	ADW80462	ABK48067	ADD93899	AAX26295	AAQ38448
	DB	9	10	7,	י ני	10	14	m	10	σ	٣	9	10	14	9	10	7	7
	Query Watch Length DB	3070	3070	3070	9600	2096	2096	1630	1630	1876	661	661	199	661	1501	1503	1503	1368
dip	Query	100.0	100.0	0.001	. מ מים	65.8	65.8	46.6	46.6	22.0	20.8	20.8	20.8	20.8	20.6	20.6	20.5	20.1
	Score	3070	3070	0/08	2020.4	2020.4	2020.4	1429.6	1429.6	676	638.2	638.2	638.2	638.2	631	631	629.4	618.2
٠	Result No.	п	8	η.	ተ ሆ	9	7	œ	σ	10	11	12	13	14	15	16	17	18

Aad47178 Clarkia b	Aav71042 cDNA enco	Aad27040 Soybean c	Adi29673 Soybean c	Adj96483 Soybean c	Aax81875 DNA encod	Aaa88683 Sweetgum	Aad11127 L. styrac	Adz14865 Syringyl	Aac40838 Arabidops	Aac49059 Arabidops	Adn73604 Thale cre	Aac40707 Arabidops	Aad27047 Soybean c	Adi29687 Soybean c	Adj96497 Soybean c	Aaq77692 Alfalfa C	Aad19546 Medicago	Aax35662 DNA encod	Adq88319 Eucalyptu	Adx32385 Plant ful	Aax35663 DNA encod	Toba	Aag38450 OMTI codi	Adq88320 Eucalyptu	Aaq38449 pOMT1.A a	Adc68550 S. arundi
AAD47178	AAV71042	AAD27040	AD129673	ADJ96483	AAX81875	AAA88683	AAD11127	ADZ14865	AAC40838	AAC49059	ADN73604	AAC40707	AAD27047	ADI29687	ADJ96497	AAQ77692	AAD19546	AAX35662	ADQ88319	ADX32385	AAX35663	ABS54111	AAQ38450	ADQ88320	AAQ38449	ADC68550
10	0	9	10	17	~	ო	4	14	ო	٣	12	ო	9	2	12	~	4	~	13	13	~	9	~	13	7	10
1486	1486	1370	1370	1370	1380	1380	1380	1380	1308	1306	1092	1267	1314	1314	1314	1341	1098	1460	534	1124	1418	1507	1431	485	1244	1452
20.0	19.9	19.7	19.7	19.7	19.2	19.2	19.2	19.2	18.4	18.4	18.4	18.1	18.1	18.1	18.1	18.1	18.1	17.4	17.4	17.2	17.0	17.0	16.9	15.8	15.6	15.5
613	611.4	603.8	603.8	603.8	589	583	589	589	566.4	564.8	564.6	556.6	556.6	556.6	556.6	555.6	554.2	534.4	534	529.2	523	523	519.8	485	478.8	475.4
19	20	21	22	23	24	25	56	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

Eucalyptus grandis promoter polynucleotide #51. ABK17109 standard; cDNA; 3070 BP. (first entry) 26-MAR-2002 ABK17109; RESULT 1 **ABK17109**

Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Bucalyptus grandis; ss; PCR primer.

Eucalyptus grandis.

WO200198485-A1. 27-DEC-2001. 20-JUN-2001; 2001WO-NZ000115.

20-JUN-2000; 2000US-00598401. 28-NOV-2000; 2000US-00724624.

(GENE-) GENESIS RES & DEV CORP LTD. (FLET-) FLETCHER CHALLENGE FORESTS IND LTD.

Lasham A; Eagleton C, Rice S, Perera R,

WPI; 2002-114583/15.

Novel polymucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.

Claim 1; Page 103-104; 121pp; English.

The invention relates to isolated promoter sequences from Pinus radiata and Bucalyptus grandis, comprising a sequence chosen from leaf-, root-, flower-, pollen-, bud-, meristem-specific promoters or temporally

8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8 \pm 8

```
1801
                                                                                                                                                                                                                                                                                                                                                                  1261
                                                                                                                                                                                                                                                                                                                                                                                       1321
                                                                                                                                                                                                                                                                                                                                                                                                          1321
                                                                                                                                                                                                                                                                                                                                                                                                                              1381
                                                                                                                                                                                                                                                                                                                           1201
                                                                                                                                                                                                                                                                                    1141
                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                                1261
                                                                                                                                                            196
                                                                                                                                                                                1021
                                                                                                                                                                                                    1021
                                                                                                                                                                                                                       1081
                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                1141
                                      781
                                                         841
                                                                             841
                                                                                                 901
                                                                                                                                         961
                   781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                      용 장
                                                                                                                                                                                                                                                                                                 ሯ
                                                                                                                                   B &
                                                                                                                                                                                Š
                                                                                                                                                                                               셤
                                                                                                                                                                                                                       ð
                                                                                                                셤
                                                                           g
                                                                                                 8
                                    g
                                                          Š
regulated promoters such as xylogenesis-specific promoters. The promoter colypeptides and their related polymuclectides are useful in the production of genetic constructs, used for modifying gene expression in a target organism, in particular a plant. The method is useful for condifying expression of a polymuclectide that comprises an intron condifying growth and development of plants, and cellular responses to for modifying growth and development of plants, and cellular responses to compounds, such as environmental factors and disease pathogens.

CC for sequences are useful in genome and physical mapping, in positional cc cloning of genes, in various assays to determine biological activity, to cloning of genes, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins and chear compounds. Sequences ABK17106-ABK17125 represent Pinus radiata

or other compounds and polynucleotides and PCR primers used in the method content of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                    CCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGATAGTCCTTTAGAAAGTCCCA 300
                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atcctggagtatatcccatgatgctggtagaagagtccattcaagccatctggaccggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCCTTGGTAAGTCCCAGTTGGAAAGTAGCTCTCTAACTTCCTTGGTAACAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTGAGATTCGGTGGTATGATGCCAGAATTAAAAAAGTGCTGCACTGATGAGAATAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gcegrarregrerandarcagargregracerregegrarragegerrang
                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGAACAGCCCGGAATTGACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATTITCIGACTITIAAAITGAJGIAGAACCICTIAGACTATIAAAAIAITGICCIGAAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATAAAAAGGTAGGGAGATAGGGGATCTCCCCGGTCGATGCCTCGGGTAGAAATA
                                                                                                                                                                                                                                                                                                                                AGGCAAAAGTTCGCCCGTTGAATTTGACACAAAAAGACACCGTCGTTATGCATTGCATTGAT
                                                                                                                                                                                                                                                                                                                                                                          1 AGCACCATCAGCAAAAAAAAAATGGGATAGAGTGGGACACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                 0;
                                                                                                                                                                                               6; Length 3070;
                                                                                                                                                                           U; 0 Other;
                                                                                                                                                                                                                     0; Indels
                                                                                                                                                                            G; 768 T; 0
                                                                                                                                                                                                 B
                                                                                                                                                                                               Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3070; Conservative 0; Mismatches
                                                                                                                                                                              Sequence 3070 BP; 829 A; 718 C; 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
```

g 8 g ⋧

8 ઠે

셤 ò

à g ò q ઠે ద ð

셤 δ

셤 ò

a Š

1800 1860 1620 1680 1680 1740 1740 1800 1620 1560 1440 1500 1140 1200 1080 1080 1020 1020 960 960 900 900 ATGCAGTGGGGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATGGAGTCGAC CICCTCGAGATCATGGCCAAGGACGGCCGGTCCTTCTCCACGGGGAAATCGCG 1681 GGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGACGAGGCGAACCTTCGCC nggrgragggrccaarartrrgcgggagggrrggrgaagccgcaaagrrccrararcga 1441 TICTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATAT CATCACCAGATCGGCCAGTAAGGGTAATATTAATTAACAAATAGCTCTTGTACCGGGAA aattitctctittaggibagtaaccaatgatgcgccatgttgacaaaaaggctgattagt AIGAICTIGGAGITGTIGGAGAATTIGCAAGCIGACGAIGGCCCCTCAGGGAAATTAA TCGTTGTTGTTTTGTATAGTTGTTGCATGAAAAATTTAGTATTTTTGTCCCCCAGCT GAGCCALTIAATICGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGTCG CAAAATTTCAGGATGGGGGCGCAAGCTTGATTGTCATGCTAGCAACATACTAGTT TATTAGGGACATATTCATCTCATTAGTAACAACCTAAGGACACTGGTTCAGAATAGGCAA 1741 1681 1801 1741 1621 1621 1501 1501 1561

셤

\$ 8 \$

```
3001 GTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTTTCAGTAAATCACTTCGAACA 3060
3001 GTGCCTGAATGATGAGAAATTGTGATATTCTGTCTTTTTTTGGTAAATCACTTCGAACA 3060
GATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAATA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to a new isolated polynucleotide comprising the Pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 AGCACCATCAGCAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 AGCACCATCAGCAAAAAAAAAAAGGGATAGAGTGGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New polynucleotide of the superubiquitin promoter from Pinus radiata, useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 10; Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                              ds; Monterey pine; superubiquitin; promoter; gene expression; transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                              Eucalyptus grandis superubiquitin related sequence #49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uery Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 3070; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; SEQ ID NO 113; 123pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Visser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  & DEV CORP LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENESIS RES & DEV CORP LT
RUBICON FORESTS HOLDINGS
                                                                                                                                                                                                                                          ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                                                          standard; DNA; 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2003WO-NZ000076.
                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                       AAAAAAAAA 3070
                                                                                                                                                        3061 AAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2003-903678/82.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wood M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO2003093475-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-APR-2003;
                                                                                                                                                                                                                                                                                                              22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13-NOV-2003
                                                                                                                       3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                     2941
                                                                                                                                                                                                                                          ADH75529
                                                                                                                                                                                                                                                                            ADH75529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (RUBI-)
                                                                                                                                                                                                      g
                                                   Š
                                                                              g
                                                                                                                      ò
                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                        2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2400
                                                                                                                                        2040
                                                                                                                                                                                                                                          2100
                                                                                                                                                                                                                                                                            2160
                                                                                                                                                                                                                                                                                                              2160
                                                                                                                                                                                                                                                                                                                                                  2220
                                                                                                                                                                                                                                                                                                                                                                                  2220
                                                                                                                                                                                                                                                                                                                                                                                                                    2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA 2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2941 AGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT 3000
                                                                                         CTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTGTTTTATGTCTATAA
                   GCACAGCTCCCGACCCCAGAACCCCCGAGGCACCCGTCCATGCTCGACCGGATCTTCCGGCTG
                                                                                                                                                                                                                                 ATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGTCGATGTCGGAGGCGGCACTGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGTCAAGGACGCGAGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCCAGGCGCGAAAAAAAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
   GCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTG
                                                                    CTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAG
                                                                                                                                        CGGCTCTACGGCTTAGGCGCCCGGTGTGCTTCTTGGTCAAGAACGAGGACGGGGTCTCC
                                                                                                                                                                          CGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCC
                                                                                                                                                                                                          ATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTG
                                                                                                                                                                                                                                                                            AAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTC
                                                                                                                                                                                                                                                                                                              AAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTC
                                                                                                                                                                                                                                                                                                                                                  GAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCAC
                                                                                                                                                                                                                                                                                                                                                                                GAGTATCATGGCACCGGACTCCAACAAGATCTTTAACCGGGGAATGTCTGATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                    TCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCCCCTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Trcagggcrrccaagrcargrgcrgcgcrrrcggcacrcacgrcargaagrrccrgaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGCTTGATCTGCTCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2641
                                   1861
                                                                     1921
                                                                                                      1921
                                                                                                                                        1981
                                                                                                                                                                          1981
                                                                                                                                                                                                          2041
                                                                                                                                                                                                                                          2041
                                                                                                                                                                                                                                                                            2101
                                                                                                                                                                                                                                                                                                              2101
                                                                                                                                                                                                                                                                                                                                                  2161
                                                                                                                                                                                                                                                                                                                                                                                  2161
                                                                                                                                                                                                                                                                                                                                                                                                                    2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2821
```

8 6 8 6

6 8 6 8 6 6

8 & 8

ठ हे ठ

셤 ò

ö

9 9 120

120

180

ಡ

æ

6 4 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8
181 AGGCMANGTTCGCCGTTGANTTGA.CGCDANAGA.CCGTCGTTANGCATTGCATGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTCATAGAATTAATT

```
Rice SJ,
                                                                                                                                                                           WPI; 2005-131806/14
                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
Matches 3070; Conserv
                                                                                                                                GENESIS 1
                                                        24-FEB-2000;
20-JUN-2000;
28-NOV-2000;
09-NOV-2001;
                        06-NOV-2003;
                                                                                            30-APR-2002;
08-NOV-2002;
                                                                                                               08-NOV-2002
        03-FEB-2005
                                                                                                                                                          ĸ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                               (GENE-)
                                                                                                                                         (RUBI-)
                                                                                                                                                           Perera
ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                           2700
                                                                                                                                                                                            2760
                                                                                                                                                                                                              2760
                                                                                                                                                                                                                               2820
                                                                                                                                                                                                                                                                 2880
                                                                                                                                                                                                                                                                                                                                     3000
                                                                                                                                                                                                                                                                                                                                                                      TCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTG 2400
                                                                                                                                        cadacaccadectadecaaccaagaargrearccacarcaacrecarcarcargreaccaca
                                                                                                                                                                                                                                         CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                           GAGCCCTTTTCTCACAGTTGGCTTCGCCATACCAAGGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                   AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                              AGAAGCGACTGTATGATGGCGCAAAGTGAAGTTACAAGATTTGTTGTTTTATGTCTTATAA
                 GTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                          GTGTCAAGCACGTCGGAGGCGACATGTTCGTCACGTTCCAAAGGGAGATGCCATTTTCA
                                                                   TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                      ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                       CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                          ACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                         ACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCCATTGGCCAAAGGGGCCCGGAT
                                                                                                                                                                                            TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                             rrcaegecriceaagrearerecreecrircescaereacereareaagricereaaga
                                                                                                                                                                                                                               CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                      AGTITIGAGICITCIGCATACTGATITCACAGAATGTGTAACGAAACGGCGTATATGGAT
                                                   TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           wood; plant; transcription; caffeic acid 0-methyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          grandis caffeic acid O-methyltransferase cDNA SEQ ID NO:113.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
1. .1643
/*tag= a
1019. .1676
/*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADW80563 standard; cDNA; 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                           3070
                                                                                                                                                                                                                                                                                                                                                                                                           AAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US2005026162-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transgenic
                                 2401
                                                  2461
                                                                  2461
                                                                                                      2521
                                                                                                                                       2581
                                                                                                                                                          2641
                                                                                                                                                                           2641
                                                                                                                                                                                                              2701
                                                                                                                                                                                                                               2761
                                                                                                                                                                                                                                                2761
                                                                                                                                                                                                                                                                 2821
                                                                                                                                                                                                                                                                                  2821
                                                                                                                                                                                                                                                                                                    2881
                                                                                                                                                                                                                                                                                                                     2881
                                                                                                                                                                                                                                                                                                                                     2941
                                                                                                                                                                                                                                                                                                                                                       2941
                                                                                                                                                                                                                                                                                                                                                                                         3001
                                                                                                                                                                                                                                                                                                                                                                                                           3061
                2401
                                                                                     2521
                                                                                                                        2581
                                                                                                                                                                                            2701
                                                                                                                                                                                                                                                                                                                                                                        3001
                                                                                                                                                                                                                                                                                                                                                                                                                           3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADW80563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Key
5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 3
                                                                                                                                                                                                        g
                                                                                                                                                                                                                           8 & 8 &
                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                              중 음
                                                                                                                                                                                                                                                                                                                                                  g
                              g
                                                  8 6
                                                                                   8
                                                                                                  g
                                                                                                                8 6
                                                                                                                                                     ઠ
                                                                                                                                                                     8 S
                                                                                                                                                                                                                                                                                                                                                                        જે
                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                          8
               8
```

```
360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241 CCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGATAGTCCTTTAGAAAGTCCCA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361 ACATTTTCTGACTTTAAATTGATGTAGAACCTCTTAGACTATTAAAATATTGTCCTGAAT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGAACAGCCCGGAATTGACGTCT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a novel isolated polynucleotide sequence comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase (COMT) promoter (ADM80563). Also calsined is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADM80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated polynucleotide sequences comprising a functional vascular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 GATAAAAAGGTAGGGAGATAAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATTGCATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTGAGATGACCTACAGTGATAGCTTGATGATGAATAAGATGGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATAAAAAGGTAGGGAGATAAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCACCATCAGCAAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTTCAGTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATTGCATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCATTGTACCCATGTAGGGTGAAATCCTAGAGGTGAGGAGATAGTCCTTTAGAAAGTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TICCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGAACAGCCCGGAATTGACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 AGCACCATCAGCAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           grandis caffeic acid 0-methyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 14; Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tissue-specific Eucalyptus grandis caffeic acid
promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 3070;
100.0%; Pred. No. 0;
:ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 2; SEQ ID NO 113; 82pp; English.
                                                                                                                                                                                                                                                                                                                                        RES & DEV CORP LTD. FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                            ä
99US-00276599.
99US-0146591P.
2000WG-NZ000018.
2000US-0059401.
2000US-00724624.
2001US-001370P.
2001US-0013709.
2002US-00134447.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
```

1198

220

1258

1318

340

400

1494

460

1554

1614

640

1674

700

1794

880

940

760

```
AACTCCGTATTTCTCTCCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTC 1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1855 ATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTC 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The sequences may also be used to tag or identify an organism or its reproductive material
                                                                                                                                                                                                                                                                                                                                                                       ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                      CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                      GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                         AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                     ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCGACCTCCTCGAGATCATGGCCAAGGCCGGGCCGGGGCGCTTCCTCTCCCCGGGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCGCGGCCCAGCTCCCGAACCCCGAGGCACCCGTCATGCTCGACCTGGATCTTC
                                                                                                                                                                                                                                                         GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGITITICICITATATICIGGITCACCGGITGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGACACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                          CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGITTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCGAACCTCCACCACACCTCCACTTCAATCCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                          Length 2096;
                                                                                 T; 0 U; 0 Other;
                                                                                                                                  Indels
                                                                                                      Similarity 99.3%; Pred. No. 0;
11, Conservative 0; Mismatches 11;
                                                                                   Sequence 2096 BP; 537 A; 535 C; 539 G; 485
                                                                                                          Query Match
Best Local Simil
Matches 2041; C
                                                                                                                                                                                                                                                                                                                                  221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  761
                                                                                                                                                          1019
                                                                                                                                                                                 41
                                                                                                                                                                                                          1079
                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                         1139
                                                                                                                                                                                                                                                                                 161
                                                                                                                                                                                                                                                                                                         1199
                                                                                                                                                                                                                                                                                                                                                          1259
                                                                                                                                                                                                                                                                                                                                                                                 281
                                                                                                                                                                                                                                                                                                                                                                                                         1319
                                                                                                                                                                                                                                                                                                                                                                                                                                  341
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  881
XXXXXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                          8 6
                                                                                                                                                                                                 õ
                                                                                                                                                                                                                           음 상
                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                  ેં
                                                                                                                                                                                                                                                                                                                          8 ጵ
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                      $ 8 $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음 장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                           2760
                                                                                                                                                                                                                                                                                                                      CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                        CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                       AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel promoter sequences useful for modulating transcription of plant sequences of interest and production of polypeptides.
                                                                          ACCCAGGCGGGAAAGAGAAGAACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                        TTCAGGGCTTCCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                 GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                         CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                            ACCCAGGCGGGAAAGAGACACACAGAAGGAGTTCGAGGCCATTGGCCCAAAGGGGCCCGGAT
                                                                                                          TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                           GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                         AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              eucalyptus; pine; gene transcription;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transferase promoter coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENESIS RES & DEV CORP LID. FLETCHER CHALLENGE FORESTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; Page. 61-62; 93pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ŗ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-00276599.
99US-0146591P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-FEB-2000; 2000WO-NZ000018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                           AAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R, Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000-647236/62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAB28142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200058474-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-OCT-2000
                                   2581
                                                                                 2641
                                                                                                                                  2701
                                                                                                                                                                                2761
                                                                                                                                                                                                                                 2821
                                                                                                                                                                                                                                                                                 2881
                                                                                                                                                                                                                                                                                                                                  2941
                                                                                                                                                                                                                                                                                                                                                                                 3001
                                                                                                                                                                                                                                                                                                                                                                                                           3061
                                                                                                          2701
                                                                                                                                                          2761
                                                                                                                                                                                                          2821
                                                                                                                                                                                                                                                         2881
                                                                                                                                                                                                                                                                                                         2941
                                                                                                                                                                                                                                                                                                                                                          3001
                                                                                                                                                                                                                                                                                                                                                                                                                                  3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAC62810;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O-methyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAC62810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GENE-)
(FLET-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perera
```

8 6 8 6

8 6

6 8 6 8 6

```
1019 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGCTGCCATAACTGT 1078
                CGAACAAAAAAAAA 3070
                                                                                                                                                                                                        20-JUN-2000; 2000US-00598401.
28-NOV-2000; 2000US-00724624.
                                                               ABK17075 standard; cDNA; 2096
                                                                                                                                                                                          20-JUN-2001; 2001WO-NZ000115.
                        (first entry)
                                                                                                                                                                                                                                                                WPI; 2002-114583/15.
P-PSDB; AAU80760.
                                                                                                                                                                                                                                                  Perera R, Rice S,
                                                                                                                                                  Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   of the invention
                                                                                                                                                                  WO200198485-A1.
                                                                                             26-MAR-2002
                                                                                                                                                                                27-DEC-2001.
                                                                                ABK17075;
     2021
                  3055
                                2081
                                                     ru n
                                                     RESULT
                                                             ABK1707
                                                                   ð
                                셤
                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2995 AIGGAIGIGCCIGAAIGAIGGAAATIGIGAIATICCIGICTICITITICAGIAAAICACII 3054
                                                                                                                                                                                                                                                                                                                                                                                 1780
                                                                                                                                                                                                                                                                                                                                                                                               2814
                                                                                                                                                                                                                                                                                                                                                                                                            1840
                                                                                                                                                                                                                                                                                                                                                                                                                                       1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1720
                                                                                                                                                                                                                                                                                                                                                                  2754
                                                                                                                                                                                                                                                                                                                          1660
                                                                                                                                                                                                                                                                                                                                       2694
                                                                                                                                                                                                                                        1480
                                                                                                                                                                                                                                                             2394
                                                                                                                                                                                                                           2454
                                                                                                                                                       1300
                                                                                                                                                                     2334
                                                                                                                                                                            1240
                                                                                                                                         2274
                                                                                  2154
                                                                                                 1180
                                                                                                              2214
                                                        2094
                                          1060
                                                               2034
ceseriecrescenserrecerserences estaces estaces estaces estaces 1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                        GIGAAGGAGCCTITITCTCACACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                  2875 ACAATAAGAAGCGACTGTATGATGGCGCCAAGTGGAAGTTACAAGATTTGTTGTTTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1961 CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT
                                                                                                                                                                                                                                                                                                                                                                                              reandaccecriticaricriccriccricgreargricaricaricaricaricariananaggric
                                                                                                                                                                                                                                                                                  ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                            TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                                                                                                                                                                                                                                                                                                CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                            CCCACAACCCAGGGGGAAAGAGAGACACAGAAGGAGTTCGAGGGATTGGCCAAAAGGGG
                                                                                                                                                                                              TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCC
                                                                                                                                                                                                        TTCCTGGTGTCAAGCACGTCGGAGGGGACATGTTCGTCAGCGTTCCAAAGGGAAGATGCCA
                                                                                                                                                                                                                                   TTTCATGAAGTGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAAGA
                                                                                                                                                                     GAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTCGTCAGCATGATCGTTGCCAAA
                                                       GICTCCATCGCCGCCACTCAACCTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTAT
                                                                                  TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACC
                                                                                           GCGITCGAGIATCATGGCACCGGCGATTCAACAACAACTTTTAACCGGGGAATGTCT
                                                                                                                       GATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAAGGGCCTTCGAGGGCCTC
                                                                                                                                                     GTCGAGCGGCTCTACGCCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGG
                                        1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2935
                                                                                                                                                                                                                                                                                                                                                                                                                                2815
                                                                                                                                                                                                                                                                                                                                                                                                     2755
                                                                                                                                                                                                                                                                                                                                             2635
                                                                                                                                                                                                                                                                                                                                                                          2695
                                                                                                                                                                                                                                                                                                                                                                                       1721
                                                                                                                                                                                                                                                                                        2515
                                                                                                                                                                                                                                                                                                     1541
                                                                                                                                                                                                                                                                                                                                1601
                                                                                                                                                                                                                                                                                                                                                            1661
                                                                                                                                                                                                                                                            2455
                                                                                                                                                                                                                                                                                                                   2575
                                                                                                                                                                                                                    1361
                                                                                                                                                                                                                                 2395
                                                                                                                                                                                         1301
                                                                                                                                                                                                      2335
                                                                                                                                                                           2275
                                                                                                       1121
                                                                                                                    2155
                                                                                                                                 1181
                                                                                                                                               2215
                                               1001
                                                              2035
                                                                          1061
                                                                                        2095
                                   1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                          ∂
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                 쉱
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                 g
                                                                                                                                                             셤
                                                                                                                                                                           ò
                                                                                                                                                                                       g
                                                                                                                                                                                                      ò
                                                                                     ò
                                                                                                   g
                                                                                                                    ઠે
                                                                                                                              ద
                                                                                                                                             ð
                                                                        g
                                              셤
                                                              8
                   셤
                                   8
```

```
The invention relates to isolated promoter sequences from pinus radiata con the invention relates to isolated promoters chosen from leaf-, root-, conformally comprised a sequence chosen from leaf-, root-, conformally considered promoters such as xylogenesis specific promoters. The promoters conformally collypopulated promoters such as xylogenesis specific promoters. The promoter conformation of genetic constructs, used for modifying gene expression in a production of a polymucleotides are useful for conformal stimulus, such as environmental factors and disease pathogens. Conformal stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional colling of genes, in various assays to determine bloogical activity, to cloning of genes, in various assays to determine bloogical activity, to cloning of genes, in various assays to determine bloogical activity, to compounds, and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABK17016-ABK77125 represent pinus radiata
Novel polynuclectide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis;
temporally regulated promoter; Pinus radiata; Bucalyptus grandis; 8s;
PCR primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 65.8%; Score 2020.4; DB 6; Length 2096; Best Local Similarity 99.3%; Pred. No. 0; Mismatches 11; Indels 4; Matches 2041; Conservative 0; Mismatches 11; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eucalyptus grandis promoter polynucleotide #31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GENE-) GENESIS RES & DEV CORP LTD.
(FLET-) FLETCHER CHALLENGE FORESTS IND LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lasham A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; Page 78; 121pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eagleton C,
                                                                                                                                                                                                                                                                                                                                                                                                                   BP.
```

1121 TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACC 1180 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 1181 11	
6 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
	1795 ATGACCTCCTCGAGATCATGGCCAAGGACGGGCGGGCTTCCTCTCCACGGGGGAA

```
1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1300
                                                                                                                                                                                                                                                                                                                                                                                                                         2154
                                                                                                                                                                                                                                                                                                                                                                                                                                             1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2214
                                                                                                                                                                                                                                                                                                                                                                1060
                                                                                                                                                                                                                                                                                                                                                                                   2094
                                                                                                                                                                                                                                                              1914
                                                                                                                                                                                                                       1854
                                                                                                                                                                                1794
                                                          1614
                                                                                                  1674
                                                                                                                                        1734
                                                                                                                                                                                                                                                                                  940
                    1554
                                                                                                                                                                                                                                          880
                                                                                                                                                             760
                                                                                                                                                                                                   820
                                                                             640
                                                                                                                     700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGACCGTGGTCGATCGAGGGGGGGCGTGGGGCGTGCTCAGCATCATCGTTGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTCATGAAGTGGATATGCCATGACTGAGTGACGACCATTGCGCGGAAGTTCCTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACCCATCAATGAAAGGGATCAACTTCGACGGCCCCAACGGATTGAAGACGCCCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Trecregatorascaecarceascaecareareareareareaceareacas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGATGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                        <u> GCGTTCGAGTATCATCGCCGACCCGATTCAACAAGATCTTTAACCCGGGGAATGTCT</u>
                                                                                                                                                                                                                                                                                                    CGGCTGCTGCCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAG
                                                                                                                                                                                                                                                                                                                GTCGAGCGGCTCTACGCGTCTGCAAGTTCTTGGTCAAGAACGAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                                   GTCTCCATCGCCGCACTCGACTTGATGAACCAGGACAAAATCCTCATGGAAAAGCTGGTAT
                                                                                                                                                                                                                                                              ATCGCGGCACAGCTCCCGAGACCCCGAGGCACCCCGTCATGCTCGACCGGATCTTC
                                                                                                                                         TCGACCGGCTCCGAGACCCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGGGAACCTC
                                                                                                                                                                                Trescanseageregeagecerecerecereceargereraagecegecearegage
                                                                                                                                                                                          ATCGACCTCCTCGAGATCATGGCCCAAGGACGGGCCGGGCGCGTTCCTCCTCTCCACGGGGAA
                                                                                                                                                                                                                                  acatattiggtgtagggtccaatattttgcgggagggttggtgaaccgcaaagttcctata
                                 TATGGAACCTCCACCACACACTCCACTTCAATCCCCACCATTAATCTCCGTTTTATTTCCT
                                                                       AGAGTITICICICITAIAITICIGGITCACCGGTIGGAGICAAIGGCAIGCGIGACGAAIGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2215
                                                                                                                                                                                                                                                                                                                                                                                                               1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1181
                                                                                                                                                                                                                                                                                                                                                                      1001
                                                                                                                                                                                                                                                                                                                                                                                                                                  2095
                                                                                                                                                                                                                               1795
                                                                                                                                                                                                                                                                                                             1915
                                                                                                                                                                                                                                                                                                                                                    1975
                                                                                                                                                                                                                                                                                                                                                                                            2035
                                                                                                                                                                                        1735
                                                                                                                                                                                                                                                                      1855
                                                                                                                                                  1675
                                                                                                                                                                                                            191
                                                                                                                                                                                                                                                                                         881
                                                                                                                                                                                                                                                                                                                                941
                                                                                                          1615
                                                521
                                                                   1555
                           1495
        461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                       8 6
                                                                                                                                                                                                                                                                                                                                                 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                   S 8
                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                               8
                                                                                                                                           상 원
                                                                                    g
                                                                                                          8
                                                                                                                        셤
                           ò
                                           셤
                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT 1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a new isolated polynucleotide comprising the pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse sequence or inverted repeat or a sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agagittictctctatattctggttcaccgttggagtcattggcgtggcgtgacgatfgf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCATCACAGATCGGCCAGTAAGGGTAATATTTAACAAATAGGTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAATTTTCTCTTTTAGGTAAGTAACAATGATGCGCCATGTTGACAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                               1019 CTGAGCCATTTAATTCGAGAGCACATGGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                     New polynucleotide of the superubiquitin promoter from Pinus radiata, useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                          DB 10; Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                             4;
                                                   Monterey pine; superubiquitin; promoter; gene expression;
                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match
Best Local Similarity 99.3%; Pred. No. 0;
Matches 2041; Conservative 0; Mismatches 11; Indels
                                Eucalyptus grandis superubiquitin related sequence #31
                                                                                                                                                                                                                   Perera
                                                                                                                                                                                                                 Rice SJ, Wood M, Eagleton CK, Visser ES,
                                                                                                                                                                                                                                                                                     Disclosure; SEQ ID NO 60; 123pp; English
                                                                                                                                                                                     GENESIS RES & DEV CORP LT
RUBICON FORESTS HOLDINGS
                                                                                                                                                30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                  30-APR-2002; 2002US-00137036
                 (first entry)
                                                                                                                                                                                                                                      WPI; 2003-903678/82
                                                                                      Eucalyptus grandis
                                                                   transgenic plant.
                                                                                                         WO2003093475-A1.
                 22-APR-2004
                                                                                                                              13-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41
                                                                                                                                                                                        (GENE-)
                                                                                                                                                                                                   (RUBI-)
```

셤

쉱 ठ

В ò 셤 ò g à

임 ò

g ò

ઠે

```
The invention relates to a novel isolated polynucleotide sequence comprising a functional vasular tissue-specific Bucalyptus grandis caffeic acid O-methyltransferase (COMT) promoter (ADW80642 or ADW80563). Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADW80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              281 ATCATCACCAGATCGGCCAGTAAGGTAATTTAATTTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGTITITCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATCGAACCTCCACCACCATCCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1019 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTCCGTATTTCTCTCACATTAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated polynucleotide sequences comprising a functional vascultissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                     Query Match 65.8%; Score 2020.4; DB 14; Length 2096; Best Local Similarity 99.3%; Pred. No. 0; Matches 2041; Conservative 0; Mismatches 11; Indels 4; C
                                                                                                                                                                                                                                                                                                                                                         Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                       Claim 3; SEQ ID NO 60; 82pp; English
              WPI; 2005-131806/14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                641
ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                      2754
                                                                                                                                                                                                                                1840
                                                                                                                                                                                                                                                                                                                                                                                                          CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGCGTAT 2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                     3054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1780
                                                                                                                                                                                                                                                                                             GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA 1900
                                TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCCACATCGACTGCATCATGTTGG
                                                                                             CCCACAACCCAGGCGGGAAAGAGAGGACACACAAAGGAGTTCGAGGCATTGGCCAAAGGG
                                                                                                                                                                                                                                TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTC
                                                                                                                                                                                                                                                                                                                                                         ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ID NO: 60.
                TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                          CCCACACCACAGGCGGGAAAGAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                      CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                    CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                                                                             GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                                                            ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGT
                                                                                                                                                                                                                                                                                                                                                                                        CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGGATGTGCCTGAATGAAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTT
                                                                                                                                                                                                   TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   wood; plant; transcription; caffeic acid O-methyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      grandis caffeic acid O-methyltransferase related cDNA SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENESIS RES & DEV CORP LTD. RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAACAAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-MAR-1999; 99US-00276599.
30-JUL-1999; 99US-0146591P.
24-FEB-2000; 2000WO-NZ000018.
20-JUN-2000; 2000US-00598401.
28-NOV-2000; 2001US-00598401.
30-NOV-2001; 2001US-0345397P.
30-APR-Z002; 2002US-00137036.
08-NOV-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGAACAAAAAAAAA 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADW80510 standard; cDNA; 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-NOV-2003; 2003US-00702319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2002US-0425087P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transgenic plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US2005026162-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               03-FEB-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ч,
                                                                                                                                    2692
                                                                                                                                                                 1721
                                                                                                                                                                                                                              1781
                                                                                                                                                                                                                                                                                                                          2875
                2575
                                           1601
                                                                          2635
                                                                                                       1661
                                                                                                                                                                                                 2755
                                                                                                                                                                                                                                                             2815
                                                                                                                                                                                                                                                                                            1841
                                                                                                                                                                                                                                                                                                                                                         1901
                                                                                                                                                                                                                                                                                                                                                                                        2935
                                                                                                                                                                                                                                                                                                                                                                                                                       1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADW80510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (RUBI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
ADW80510
                                                                                                                                                           6 B
                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                   8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                              8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                셤
                                                                       8
                                                                                             8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                          ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8
```

160

100

1078

ä

4; Gaps

1198

1258

280

1318

340

1378

400

1494

520

1554

580

1614

640

700

1434

	AAA68014 standard; DNA, 1630 BP. AAA68014; XX AAA68014; XX AAA68014; XX Plant; lignin; lignin biosyntheric pathway; Eucalyptus grandis; Elecalyptus grandis. XX Blocalyptus grandis. XX ACCCT-1999; 99WC-NZ000168. XX BO-CCT-1999; 99WC-NZ000168. XX XX XX XX XX XX XX XX XX
4 6	TICTAGGGCTTAGGGCGGGTGATGGTGATGGTGATGGTGATGGGGGGGTGATGGGGGG

```
BLOKSBERG L N.
HAVUKKALA I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                plant; lignin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US2003131373-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-NOV-1997;
09-OCT-1998;
14-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-SEP-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-JUL-2003
                                    2500
                                                        901
                                                                             2560
                                                                                                                     2620
                                                                                                                                         1021
                                                                                                                                                              2680
                                                                                                                                                                                   1081
                                                                                                                                                                                                         2740
                                                                                                                                                                                                                             1141
                                                                                                                                                                                                                                                 2800
                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                          2860
                                                                                                                                                                                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                   2920
                                                                                                                                                                                                                                                                                                                                                        1321
                                                                                                                                                                                                                                                                                                                                                                             2980
                                                                                                                                                                                                                                                                                                                                                                                                 1381
                                                                                                                                                                                                                                                                                                                                                                                                                       3040
                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
                                                                                                961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADD41764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADD41764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BLOK/)
(HAVU/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADD41764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                 요
                                                                          ઠે
                                                                                          g
                                                                                                                  ઠે
                                                                                                                                     셤
                                                                                                                                                           8
                                                                                                                                                                             g
                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                            요
                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                   1720
                                                                                                                                                                                                                                                                                                     1840
                                                                                                                                                                                                                                                                                                                                              1900
                                                                                                                                                                                                                                                                                                                                                                                        1960
                                                                                                                                                                                                                                                                                                                                                                                                                                 2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2439
                                                                                                                                                                                                                                                             ACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAA 1780
                                                                                                                                                                         AGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA 2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGAGGTTCAACAAGATCTTTA 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG 2499
                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                 AGGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTCA 180
                                                                                                                                                                                                                                                                                                                                                                  rerecegeagaagregeageceagereceaaceeaaaceeaaageaceecerearge 300
of a plant, especially eucalyptus and pine species, and for modifying the activity of an enzyme involved in lignin biosynthetic pathway, and for producing a plant having altered lignin content, composition and structure. They can be used for designing probes and primers useful for detecting similar DNA and RNA sequences in any organism and for PCR amplification. The lignin content can be efficiently modified using the polynucleotides. AAA67908 to AAA68201 and AAB16341 to AAB16449 represent polynucleotide and protein sequences used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                    AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG
                                                                                                                                                                                                                                 AGGAGAGAATGGGTTCGACCGGATCCGAGACCCCAGATGACCCCGACCCAAGTCTCGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGTACGGGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCGGCCGTGCTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCCTGCTCCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rgarderridecaaanacecardaaaaggardaacrregacregecreacerdarre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                                                                                     AGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGCCCGGGCGCGTTCC
                                                                                                                                                                                                                                                                                                                         AGGCCGCCATCGAGCTCGACCTCGAGATCATGGCCAAGGCCGGGCCGGGCGGTTCC
                                                                                                                                                                                                                                                                                                                                               TCTCCACGGGGAAATCGCGCCACAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGC
                                                                                                                                                                                                                                                                                                                                                                                        TCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCGGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781 AAGACGCTCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                              Gaps
                                                                                                                               Length 1630;
                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAGTT
                                                                                                           T; 0 U; 0 Other;
                                                                                                                                                    14; Indels
                                                                                                                                DB 3;
                                                                                                                               Score 1429.6;
Pred. No. 0;
0; Mismatches
                                                                                                           C; 439 G; 364
                                                                                                           Sequence 1630 BP; 394 A; 433
                                                                                                                              Query Match
Best Local Similarity 99.0%;
Matches 1449; Conservative
                                                                                      present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2380
                                                                                                                                                                         1601
                                                                                                                                                                                                                   1991
                                                                                                                                                                                                                                                            1721
                                                                                                                                                                                                                                                                                                                                               1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2321
                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                     1781
                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                        1901
                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                 1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6 B 6
                                                                                                                                                                                                                                                                           8 6 8 6 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                          $ B $ B $ B $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음 상 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 S
    8888888888888888
                                                                                                                                                                         ò
                                                                                                                                                                                        셤
                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                    8
```

```
2679
                                                                                                                                                                                                                                                                                                                                                                               2799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2919
                                         2559
                                                                                                                        2619
                                                                                                                                                                    1020
                                                                                                                                                                                                                                                    1080
                                                                                                                                                                                                                                                                                            2739
                                                                                                                                                                                                                                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1440
900
                                                                                960
                                                                                                                                                    AGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caaagegagargecarrrrcargaagregarargecargacregagreaccarrece
                                                                                ceaagriccicaagaacrecracgarececricccaacaaregaaagerearecare
                                                                                                                          AGTGCGTACTCCCTGTGTACCCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                           ACTGCATCATGTTGGCCCCACACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGG
                                                                                                                                                                                                                                                                                              CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                                                                 ACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGGTGATGTTCATGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                         TGGATTTGAAAGGTCGTGAAGGACCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       regartreaaagercereaageceerrreceaagriceaagric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITGITIGITITATGICIATAAAGITITIGAGICITCIGCATACTGATTTCACAGAATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            content; lignin composition; lignin structure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       j
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCAGTAAATCACTTCGAACAAA 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96US-00713000.
97US-00975316.
98US-00169789.
99US-0143833P.
2000US-00615192.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard; DNA; 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-JUN-2002; 2002US-00174693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O-methyl transferase DNA #13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  lignin biosynthesis; gene
```

```
2980 AACGAAACGGCGTAIATGGAIGTGCCTGAATGATGGAAATIGTGAIATICTGICTTCTTT 3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1200
                                                                                                                                                                                                                                                                                   2619
                                                                                                                                                                                                                                                                                                                     1020
                                                                                                                                           2499
                                                                                                                                                                                                             2559
                                                                   2439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Strawberry; O-methyltransferase; 2,5-dimethyl-4-hydroxy-3(2H)-furanone; STOMT; DMHF; dithiothreitol; 2,5-dimethyl-4-methoxy-3(2H)-furanone; DTT; DMMF; enzyme; plant; gene; ds.
                                                                                                       840
                                                                                                                                                                           900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTTTCACAGAATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGATTTGAAAGGTCGTGAAGGAGCCCTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                                                                                                                                                                             ACTGCATCATGTTGGCCCACCAACAACGGGGAAAAGAGGAGGACACAGAAGGAGTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                            CATTGGCCAAAGGGGCCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                2740 ACGICAIGGAGIICCIGAAGACCGCIIGATCIGCICCTCTGIGGIGGIGAIGTICAIGGIICI
                                                                                                                                                                                                                                                                                 AGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                    CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGAGTGACGACCATTGCG
                                                                                                                                                            TGATCGTTGCCAAATACCCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                     AAGACGCCCGACCCTTCCTGGTGTGAAGCACGTCGGAGGGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Strawberry O-methyltransferase (STOMT) DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCAGTAAATCACTTCGAACAAA 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
106. .1203
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAL60735 standard; DNA; 1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ananassa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-SEP-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fragaria x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAL60735;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2860
                                                                                                                                                                                                                              2500
                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                    2560
                                                                                                                                                                                                                                                                                                                                                                        2620
                                                                                                                                                                                                                                                                                                                                                                                                          1021
                                                                                                                                                                                                                                                                                                                                                                                                                                            2680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1081
                                                                                                                                                                                                                                                                                                                                    961
                                                                                                                                                          2440
                2321
                                                                                    2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 10
AAL60735
ID AAL60735
XX
AC AAL60
XX
DT 03-SE
XX
XX
XX
Straw
XX
STWM
KW
DMMF;
XX
XX
CS
STGA
XX
STGA
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KE
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
TH
KW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                           8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                   상 원
                                                                                                                                                                                     g
                                                                                                                     g
                                                                                                                                                          ઠ
                                             셤
                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ceracecaricaccerrecagnaracareceacceacecearreacaacerria 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                              The invention relates to an isolated polynucleotide. The polynucleotides, polypeptides and genetic constructs are useful for modulating lignin content, composition and structure of plants, or for producing a plant having altered lignin content, composition and structure. The polynucleotides are also useful in genome mapping, physical mapping positional cloning of genes, or as non-disruptive tags for marking organisms, particularly plants. The present sequence represents a polynucleotide associated with the lignin biosynthetic pathway.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                        New polynucleotide associated with the lignin biosynthetic pathway, for modulating lignin content, composition and structure of plants, or producing a plant with altered lignin content, composition and structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     accegegaatgtctgatcactccaccattactatgaagaagatactggaaacatacaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gerregaggeerregaggeeregregargaargeeggggeeracregaggeereca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGACCGGATCTTCCGGCTGCTGCCGACTACTCCGTGCTCACGTGCACCTCCGCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCCCGATGGCAAGGTCGAGCGGCTTAAGGCGCCGGGGGGTGTGCTGCTAGGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2021 AGAACGAGGAGGACTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1661 AGGAGAAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCAAGTCTCGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACGAGGCGAACCTCTTCGGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   agecegecaregagaregacerecagagareargacegagegagegeregreegreegree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTCCACGGGGAAATCGCGGCACAGGTCCCGACCCAGAACCCCGAGGCACCCCGTCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                               Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                               Sequence 1630 BP; 394 A; 433 C; 439 G; 364 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                      14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 46.6%; Score 1429.6; DB 10;
Best Local Similarity 99.0%; Pred. No. 0;
Matches 1449; Conservative 0; Mismatches 14; I)
                                                                                                                                                                      Claim 1; SEQ ID NO 107; 206pp; English.
                                   Havukkala
                                                                   WPI; 2003-829606/77
                                     Ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1721
                                       Bloksberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      н
```

ò 셤

엄 ò g

셤 ઠ

d d 8

g δ 요 ઠે

요 ò

g ò

ò 셤 ò a ò

```
2265
                                                                                                                                                                                                                       2325
                                                                                                                                                                                                                                                                                                                                                                                                        2444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1000 ATTCTTCCTGTTGCACCAGACACTAGCCTTGCCACCAAGGGAGTTGTCCATATGGATGTG 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1060 ATCATGTTGGCGCACAAACCCTGGCGCAAAGAGAGGACGGAGCAGGAATTTGAAGCCCTG 1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTAAGGGTTCTGGATTCCAAGGCATTCGCGTCTGCTGTGATGCTTTCAACACCTATGTC 1179
                                                                                                                                                                                                                                                                                                             GTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCCCCAACGGATTGAAGAC 2384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2445 GGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAG 2504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2565 GTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGC 2624
                                                                                                                                                                                                                                                                                                                                                                                                                                                  879
520 AGCTGGTATCATTTGAAGGATGCAGTTCTTGATGGTGGGATTCCATTTAACAAGGCCTAT 579
                                                                                                                                                                                                                                                                    700 GAGGGCCTCAAATCCATCGTTGATGTCGGTGGCGGCACCGGAGCTGTGGTGACATGATC
                                                                                                                                                                                                                                                                                                                                                  GITICCAAGTACCCTTCGATCAAGGCATCAACTTCGACTTGCCTCATGTTATCGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTCCTCAATATCCTGGTGTTCAACACGTTGGAGGGGGACATGTTTTTGTAAGTGTACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2146 GGGATGACCGCGTTCGAGTATCATGGCACCGGCGATTCAACAAGATCTTTAACCGG
                                                                                     580 gecargacratricarraccaredaacreaccraearrcaacaaegrerreacaae
                                                                                                                                  GGAATGTCTGATCACTCCACTATACTATGAAGATACTGGAAACATACAAGGGCTTC
                                                                                                                                                                              ggaarggecrigaccactroccargaagaaaarccrrgagacrracaaaggcrrc
                                                                                                                                                                                                                                                                                                                                                                                                        2385 GCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATGTTGGCCCACACCCAGGCGGGAAAGAGGACACACAGAAGGAGTTCGAGGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Promoter; eucalyptus; pine; gene transcription; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              O-methyl transferase promoter coding sequence #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GENE-) GENESIS RES & DEV CORP LTD.
(FLET-) FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGGAGTTCCTGAAGACCGCTTGA 2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arreagrirciraagaagarcrea 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-FEB-2000; 2000WO-NZ000018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-00276599
99US-0146591P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAC62762 standard; DNA; 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200058474-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-MAR-1999;
30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            05-0CT-2000
                                                                                                                                    2206
                                                                                                                                                                                640
                                                                                                                                                                                                                            5266
                                                                                                                                                                                                                                                                                                                2326
                                                                                                                                                                                                                                                                                                                                                            760
                                                                                                                                                                                                                                                                                                                                                                                                                                                    820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAC62762;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAC62762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                              셤
                                                                                                                                    ઠે
                                                                                                                                                                       셤
                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTAC 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1666 AGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCC 1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGCCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAAC 2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAA 2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to novel strawberry O-methyltransferase (STOWT) polypeptides capable of methylating an ortho-dihydroxy substituted ring system and nucleic acid molecules encoding such polypeptides. The invention is useful for methylation of an ortho-dihydroxy substituted ring system and/or its mimetics (such as 2,5-dimethyl-4- hydroxy-3(2H)-furanone (DMHF) or dithiothreitol (DTT)). The invention is also useful for the synthesis of naturally occurring substances preferably aroma compounds such as 2-methoxyphenol, vanillin, ferulic acid, feruoxl-CoA or DMMF, for enhancing the function of naturally-occurring STOMT in plants or tissue cultured cells, or to enhance the production of flavourenhancing substances such as vanillin or 2,5-dimethyl-4-methoxy-3(2H)-furanone (DMMF). The present sequence is Fragaria x ananassa (strawberry) O-methyltransferase DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTCTC 1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1846 ACGGGGGAAATCGCGGCACAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGAC 1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTAGTGATCTAGCCTCTCAGCTTCCGACCAAGAACCCCGAAGCTCCGGTCATGCTCGAC 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTATGCTTCGCCTTCTGGCCTACTCCATTCTAACCTGCTCATTGCGTACGCTTCCG 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACGGCAAAGTTGAGAGGCTCTACTGTTTGGGACCTGTGTGTAAGTTCTTGACCAAGAAT 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAATGGGTTCCACCGG---CGAGACTCAGATGACTCCGACCCATGTCTCCGACGACGAA 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGATGGCGTCTCTATTGCTGCTCTCTGCCTCATGAACCAGGACAAGGTCCTCGTCGAG 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCAACCICITCGCCATGCAACTCGCCAGCGCCTCCGTCCTCCCCATGGTCCTCAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCATCGAGCTCGACCTCTTGGAGATCATGGCCAAGGCCGGACCGGGCTCTTTCCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                 Novel isolated strawberry O-methyltransferase polypeptide useful for methylating ortho-dihydroxy substituted ring system such as catechol, caffeic acid, protocatechuic aldehyde or pyrogallol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1876 BP; 432 A; 449 C; 429 G; 566 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 676; DB 9; Length 18'
Pred. No. 7e-176;
0; Mismatches 250; Indels
                                                                                                                                                                                                                          BAYERISCHE JULIUS MAXIMILIANS WUERZ.
  /product= "STOMT protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 75-76; 78pp; English
                                                                                                                                                                                                                                                                    Σ
                                                                                                                                                                                26-NOV-2001; 2001US-0332534P
                                                                                                                                    26-NOV-2002; 2002WO-EP013320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22.0%;
ilarity 77.0%;
Conservative
                                                                                                                                                                                                                                                                    Kaldenhoff R,
                                                                                                                                                                                                                                                                                                                2003-532772/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
Matches 850; Conserv
                                                                                                                                                                                                                                                                                                                                       P-PSDB; AAO30114
                                              WO2003046163-A2
                                                                                                                                                                                                                          (UYBA-) UNIV
                                                                                          05-JUN-2003
                                                                                                                                                                                                                                                                    3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                      Schwab
```

요

8 8 8

셤

\$ 8 \$

중 읍

8 & 8

```
26-MAR-2002
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1674
                                                                                                                                                                                                                                                                                                   1318
                                                                                                                                                                                                                                                                                                                                  1378
                                                                                                                                                                                                                                                                                                                                                                                                AGAGTTTTCTCTCTGTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT 1494
                                                                                                                                                                                                                                                                                                                                                                                                                               ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA 1554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              099
                                                                                                                                                                                                    CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 1138
                                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGGTGACGATGGCCCCTCAGGGAAATT 1198
                                                                                                                                                                                                                                                                   AAGGCGCCAAACCCAAGATTGCAAAAGAGCACAAAAGAGCACGACCCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                           Novel promoter sequences useful for modulating transcription of plant DNA sequences of interest and production of polypeptides.
                                                                                                                                                                                     9
                                                                      The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The sequences may also be used to tag or identify an organism or its
                                                                                                                                                                                                                                                                                                                                                                                                                                               481 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTAATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Graricaricardirorriderideaaarrrideaageridaedardeeceereaggaaarr
                                                                                                                                                                                                                                                                            ATCATCACCAGATCGGCCAGTAAGGGTAATATTAAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                            AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                               421 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGAATGT
                                                                                                                                                                                 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                       Gaps
                                                                                                                                                      4;
                                                                                                                                    Score 638.2; DB 3; Length 661;
Pred. No. 1.2e-165;
0; Mismatches 3; Indels 4:
                                                                                                                       Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
   Eagleton CK
                                                          Claim 1; Page 48; 93pp; English
                                                                                                                                         20.8%;
                                                                                                                                                          654; Conservative
                                                                                                           reproductive material
     Rice SJ,
                    WPI; 2000-647236/62
                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1675
                                                                                                                                                                                                                                                                                                                                                                                                                                    1495
                                                                                                                                                                                                                                                                                                                                                                                                      1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                      1379
                                                                                                                                                                                                                                        1139
                                                                                                                                                                                                                                                                        1199
                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                       1319
                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                          1079
                                                                                                                                                                                                                                                                                                        1259
     œ
                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                 ò
      유
                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                        셤
                                                                                                                                                                                                         Š
```

ABK17027 standard; cDNA; 661 BP.

RESULT 12 ABK17027 ID ABK1

```
The invention relates to isolated promoter sequences from Pinus radiata and Bucalyptus grandis, comprising a sequence chosen from leaf-, root-, comprising a sequence chosen from leaf-, root-, corresponders or temporally corresponders such as xylogenesis-specific promoters. The promoters corresponders and their related polymucleotides are useful in the production of genetic constructs, used for modifying gene expression in a crayet organism, in particular a plant. The method is useful for modifying expression of a polymucleotide that comprises an intron conditying expression of a polymucleotide that comprises an intron conditying growth and development of plants, and cellular responses to for modifying growth and development of plants, and cellular responses to certernal stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or or other compounds. Sequences ABKI/1016-ABKI/125 represent Pinus radiata corresponding interacting proteins and but invarion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1199 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel polynucleotide promoter sequences from Pine and Bucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                 Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; 88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1079 CGAAITITICICITITIAGGIAAGIAACCAATGATGCGCCCATGTTGACAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20.8%; Score 638.2; DB 6; 98.9%; Pred. No. 1.2e-165; iive 0; Mismatches 3;
                                            Eucalyptus grandis promoter polynucleotide #6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GENE-) GENESIS RES & DEV CORP LTD.
(FLET-) FLETCHER CHALLENGE FORESTS IND LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lasham A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; Page 63-64; 121pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 98.9%;
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                       20-JUN-2001; 2001WO-NZ000115.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-JUN-2000; 2000US-00598401.
28-NOV-2000; 2000US-00724624
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-114583/15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rice S,
                                                                                                                                                                                                                                      Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                  WO200198485-A1.
                                                                                                                                                                                                                                                                                                                                                                 27-DEC-2001
                                                                                                                                                                             PCR primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perera R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

ď

1078

9

1138

1198

8 8 8 8

g

ద 8 셤

ò

180

1258

1318

300

1378

420

480

1614

900

540

1674

Thu

셤

us-10-702-319a-113.rng

```
ACATATIGGIGIAGGGICCAAIAITITIGGGGAGGGITIGGIGAACGGCAAAGTICCTATA 1554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGITITICICITATATICIGGITCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT 1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement, reverse complement, reverse sequence or inverted repeat or sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleoride is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                         241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                              AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                         ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGCTGCCATAACTGT
                                                                                                                                                                                     CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                 cgaartritcrcrrrraggraagraaccaargargcarcargrrgacaaaaaggcrgarra
                                                                                                                                                                                                                                                                                GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCGAACCTCCACCATACCTCACTTCAATCCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAATITICICITITIAGGIAAGTAACCAATGAGGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATCGAACCTCCACCACCATACCTCACTTCAATCCCACCATTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E. grandis caffeic acid O-methyltransferase promoter SEQ ID NO:12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ss; wood; plant; transcription; caffeic acid O-methyltransferase; transgenic plant.
                                                                                                                                         4;
                                                                                                              10; Length 661;
                                                                                   Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                         Indels
                                                                                                           20.8%; Score 638.2; DB 10
98.9%; Pred. No. 1.2e-165;
iive 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                           Best Local Similarity 98.5
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADW80462 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                    1019
                                                                                                                                                                                              н
                                                                                                                                                                                                                         1079
                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                1139
                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                      1199
                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                           1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADW80462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
     888888
                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                      8 8
                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                          원장
                                                                                                                                                                                                                                                                                                                                                                                                                                         ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                 1378
                                                                                                                                                                                                              1494
                                                                                                                                                                                                                                                                    1554
                                                                                                                                                                                                                                                                                                                                                                              1674
                                                                                                                                                       1434
                                                                                                                                                                                                                                                                                                                        1614
                                                                                                                 AACTCCGTATTTCTCTCCATATAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                   909
                                                                                                                                                                                                                                                                                                                                                                                                        9
  ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGG
                                                                                                                                                                      TATCGAACCTCCACCATACCTCACTTCAATCCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                       AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                    ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                         AACTCCGTATTTCTCTCTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                              AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to a new isolated polynucleotide comprising the pinus radiata (Monterey pine) superubiquitin promoter sequence, its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ds; Monterey pine; superubiquitin; promoter; gene expression; transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New polynucleotide of the superubiquitin promoter from Pinus useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bucalyptus grandis superubiquitin related sequence #6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Visser ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; SEQ ID NO 12; 123pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GENE-) GENESIS RES & DEV CORP LTD.
(RUBI-) RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rice SJ, Wood M, Eagleton CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2003-903678/82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO2003093475-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                    T 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ť 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22-APR-2004
                                                                                                 1319
                                                                                                                                                       1379
                                                                                                                                                                                                            1435
                                                                                                                                                                                                                                                                    1495
                                                                                                                                                                                                                                                                                                                         1555
                                                                                                                                                                                                                                                                                                                                                                              1615
                                                                                                                                                                                                                                                                                                                                                                                                                                    1675
                                                                       241
                                                                                                                            301
                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                    181
                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADH75428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADH75428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
ADH75428
```

300

1434

420

1494

480

1614

009

9

1554

```
plant; aspen; phenylpropanoid pathway; agronomic; lignin; paper; 4-coumarate-CoA ligase; 4CL; coniferyl aldehyde 5-hydroxylase; CAld5H; 5-adenosyl-I-methionine-dependent; 5M, AldOMT: transgenic; grass; 5-hydroxyconiferaldehyde O-methyltransferase; cellulose; pulp; coniferyl alcohol dehydrogenase; CAD; sinapyl alcohol dehydrogenase; CAD; syringyl; guaiacyl; agriculture; gene; ss.
                                                                    Genetically transforming plant with multiple genes from phenylpropanoid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "5-hydroxyconiferaldehyde O-methyltransferase
                                                                                                                  ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                TATOGAACCTCCACCACATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                              1435 AGAGTITICICICIAIAITCIGGIICACCGGIIGGAGICAAIGGCAIGCGIGACGAAIGI
                                                                                                                                            241 ATCATCACCAGATACGGCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                1319 AACTCCGTAITICTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA encoding 5-hydroxyconiferaldehyde O-methyltransferase (AldOMT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (UNMT ) UNIV MICHIGAN TECHNOLOGICAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABK48067 standard; cDNA; 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-SEP-2001; 2001WO-US027445.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-SEP-2000; 2000US-0230086P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65. .1162
/*tag= a
/product= "
(AldOMT) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-351773/38.
P-PSDB; AAU80015.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Populus tremuloides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Li L;
                                                                                                                                                                                                                                                                                                                                                                                                                                              T 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200220717-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chiang VLC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ę٠
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABK48067;
                                                                                                                                                                                                                                                        1495
                                                                                                                                                                                                                                                                                                                      1555
                                                                                                                                                                                                                                                                                                                                                                                  1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                             1379
                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
ABK48067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                     원
                                                                                                                                                                                     ò
                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                  엄
                                                                 5
                                                                                        g
                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1259 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGCGCCAAACCCCAGAITGCAAAAGAGCCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to a novel isolated polynucleotide sequence comprising a functional vascular tissue-specific Bucalyptus grandis caffeic acid O-methyltransferase (COMT) promoter (ADM80462) or ADM80563). Also claimed is a genetic construct comprising the above polynucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADM8051), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 14; Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 1.2e-165;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
20.8%; Score 638.2;
Best Local Similarity 98.9%; Pred. No. 1.2
Matches 654; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                          GENESIS RES & DEV CORP LTD. RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 2; SEQ ID NO 12; 82pp; English
                                                                      Location/Qualifiers
537. .543
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                           Eagleton CK;
                                                                                                                                                                                                                                25-MAR.1999; 99US-00276599.
30-JUL-1999; 99US-0146591P.
24-FBZ-2000; 2000WG-NZ000018.
20-UJN-2000; 2000US-00594601.
28-NOV-2000; 2000US-00724624.
09-NOV-2001; 2001US-0345397P.
30-APR-2002; 2002US-00137036.
08-NOV-2002; 2002US-00137036
                                                                                                                                                                                                                                                                                                                                 30-APR-2002; 2002US-00137036.
08-NOV-2002; 2002US-00291447.
08-NOV-2002; 2002US-0425087P.
                                                                                                                                                                                                    2003US-00702319
                                                                                                                                                                                                                                                                                                                                                                                                                                             Perera R, Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2005-131806/14
                                           Eucalyptus grandis.
                                                                                                                                           US2005026162-A1
                                                                                                                                                                                                     06-NOV-2003;
                                                                                             TATA signal
                                                                                                                                                                         03-FEB-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                               (GENE-)
(RUBI-)
```

유 ò g ò 셤 ò

ઠે

```
The invention relates to a method of genetically transforming a plant simultaneously with multiple genes from the phenylpropanoid pathways, comprising incorporating into the genome of the plant, a number of genes, comprising incorporating into the genome of the plant, a number of genes, their substantially similar fragments or their combinations, to produce plants displaying altered agronomic traits. The genes are selected from 4 -coumarate-CoA ligase (4CL), coniferyl aldehyde 5-hydroxylconiferaldehyde O-cadenosyl-L-methionine (5AM) dependent 5-hydroxyconiferaldehyde O-cadenosyl-L-methionine (5AM) dependent 5-hydroxyconiferaldehyde O-cadenosyl-L-methionine (5AM) dependent 5-hydroxyconiferaldehyde (CC methyltransferase (AldowT), coniferyl alcohol dehydrogenase (CAD) and cransformation of plant tissue for the alteration of lignin monomer content and transgenic plants resulting from such cransformations. This is an improved method to simultaneously control the calling quantity, lignin compositions, and cellulose contents in plants, cond is applicable to all plant species that are susceptible to the cransfer of genetic information by Agrobacterium or other gene delivery system. The method is of particular value to paper and pulp industries cusceptible to chemical delignification. Woody plants transformed with DNA constructs offer a significant advantage in the delignification of the erologous SAD gene offers a unique method for increasing the cheerologous SAD gene offers a unique method for increasing the cheerologous SAD gene offers a unique method for increasing the convention in grasses by insertion and expression of the coding sequence of 5-hydroxyconimention
comprises incorporating number of genes into the genome of the produce plants displaying altered agronomic traits.
                                                                                     Example 2; Fig 4A; 95pp; English
  pathways, plant, to p
```

Sequence 1501 BP; 396 A; 344 C; 331 G; 430 T; 0 U; 0 Other;

1806 1866 2226 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1746 CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926 AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGGGCGCTC 1986 TACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2046 2106 2107 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2166 319 439 499 GAAACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGCACACCTCTTTGCCATGCAA 139 140 CTAGCCAGTGCTTCTACCAATGATCCTCAAAACAGCCATTGAACTCGACCTTCTT 199 200 GAAATCATGGCTAAAGCTGGCCCTGGTGCTTTCTTGTCCACATCTGAGATAGCTTCTCAC 259 AGCTACTCCATTCTTACCTGCTCTCTGAAGATCTTCCTGATGGGAAGGTTGAGAGACTG 379 CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC GAGATCATGGCCAAGGACGGGCCGGGCGTTCCTCCACGGGGAAAATCGCGGCACAG TATGGCCTCGCTCTGTTTGTAATTCTTGACCAAGAACGAGGACGGTGTCTCTGTCAGC 440 CCTCTCTCTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGAT 500 GCAATTCTTGATGGAGGAATTCCATTTAACAAGGCCTATGGGATGACTGCATTTGAATAT CATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC creceraceaaaacecergargececergicargrayacacegrarecreegecreeger 2047 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT 1; Gaps Length 1501; Score 631; DB 6; Length 150 Pred. No. 1.8e-163; 0; Mismatches 275; Indels Query Match 20.6%; Best Local Similarity 74.5%; Matches 807; Conservative (1927 1987 380 1687 1747 1807 1867 260 2167 80 320 8 8 ď 8 셤 셤 ઠે 셤 8 6 8 8 ठे 요 ò ð

2346 2405 2465 2525 2585 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCA 2645 2646 GGCGGGAAAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGATTTCAG 2705 2286 739 859 740 AAGGCCATTAACTTCGATCTGCCCCACCATTGAGGATGCCCCATCTTATCCCGGAGTG 799 560 CATGGCACGGATCCAAGATTCAACAAGGTCTTCAACAAGGAATGTCTGACCACTCTACC 619 GATGTTGGTGGTGGGACTGGAGCCGTCGTTAACACCATCGTCTCTAAATACCCTTCAATC 2227 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCTTCGAGGGCTTGGAGGGGTC ATTACCATGAAGAAGATTCTTGAGACCTACAAAGGCTTTGAAGGCCTCACGTCCTTGGTG GATGTCGGAGCGGCCACTGGGGCCGTGCTCAGCATGGTTGCCAAATACCCATCAATG AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 800 gagcardriggregedeacardrirgriagedeceaaagcagargcerrircardaag TGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2526 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC 2706 GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT TGA 2768 980 1040 620 2287 2347 2466 920 2586 980 2766 ద g 셤 셤 8 a ð ద ò 윱 ò à 8 ò ઠે 셤 ઠે 8 ઠે

1, 2006, 00:21:16 completed: November ne : 1304.78 secs Job time Search

1160 TAN 1162

THIS PAGE LEFT BLAUK

	Ľťď.
1 5.1.9	Biocceleration
version	- 2006
enCore	(c) 1993
Ger	ΰ
	Copyright

model
3
using
search,
nucleic
١
nucleic
δ

		aec
Seconds	,	17207.024 Miliion ceil updates/sec
.88	(E)	Sell
9166	nent	, 101
ime	without alignments)	MILL
cht	ut a	024
Sear	itho	207.
•-	3	11
: 19		
:29		
23		
2006,		
31,		
October 31, 2006, 23:29:19 ; Search time 9976.88 Seconds		
:uo		
Run		
ĸ		

US-10-702-319A-113 3070 1 agcaccatcagcaaaaaata.....acttcgaacaaaaaaaa 3070 Title: Perfect score: Sequence:

⁴⁸²³⁶⁷⁹⁸ segs, 27959665780 residues IDENTITY NUC Gapop 10.0 , Gapext 1.0

, (96473596
5780 residues	Total number of hits satisfying chosen parameters:
27959665780	chosen
8 segs,	satisfying
4823679	E hits
	r of
hed:	numbe
Searched	Total

BST:* 1: gb_estl:* 3: gb_ests:* 4: gb_ests:* 6: gb_htc:* 7: gb_estc:* 10: gb_ests:* 11: gb_ests:* 11: gb_gssl:* 11: gb_gssl:* 13: gb_gssl:* 14: gb_gssl:*	ł
Database :	

14: gb_gss4:*
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	BX831565 Arabidops	DT546163 EST105680	C0072302 GR Ea31G	DT566827 EST107746	CB975481 CAB30007	DV465073 MTUNUL1.P	CO071813 GR Ea30H	CO082948 GR Ea47M	DT558009 EST106864	CO087218 GR Ea05J	CX664219 UCRCP01 0	CX668414 UCRCP01_0	CX664056 UCRCP01_0	CX663706 UCRCP01_0	DT497587 WS01126.B	CX670521 UCRCP01 0	CO080744 GR Ea44G	DV465876 MTUNUL1.P	CX668666 UCRCP01_0
SUMMARIES	ΩI	CNS09ZRE	DT546163	C0072302	DT566827	CB975481	DV465073	C0071813	C0082948	DT558009	C0087218	CX664219	CX668414	CX664056	CX663706	DT497587	CX670521	CO080744	DV465876	CX668666
	DB	9	10	8	10	4	10	œ	æ	10	œ	σ	σ	σ	σ	10	σ	8	10	σ
	Query Match Length DB	1315	951	907	930	848	958	853	864	895	880	961	931	964	917	911	879	848	891	874
de	Query Match	17.4	17.4	16.7	16.4	16.4	16.1	16.0	15.9	15.9	15.9	15.9	15.8	15.7	15.6	15.4	15.4	15.4	15.3	15.3
	Score	535.4	533	512	504.2	504	494.8	490.8	489.6	489.2	489	488.6	484.8	480.6	479.8	473	472	471.6	469.4	468.4
	Result No.	п	~	e	4	S	9	7	æ	σ	10	11	12	c 13	14	15	16	17	18	19

CK519716 B9SP10h05 CK665083 UCRCP01_0 CK664451 UCRCP01_0 DT571100 EST108174 CO080205 GR_E4431 CO013461 GR_E0013 CO094187 GR_E416C CK66405 UCRCP01_0 CK66405 UCRCP01_0 CK66405 UCRCP01_0 CK66405 UCRCP01_0 CK66405 UCRCP01_0 CK66405 UCRCP01_0 CK66405 UCRCP01_0 CK66405 UCRCP01_0 CK66405 UCRCP01_0 CK66405 UCRCP01_0 DY4664481 GQ015M13. CK67052 UCRCP01_0 DY47664 WS01277.0 DY47064 OB_ESD038 CK319284 K9P09407 CK119284 K9P09407 CK119284 K9P09407 CK119286 EST106930 CK119286 EST11083	DT041484 Mdrtp1004 DT041484 Mdrtp1004 DN759581 G.hir-ste
CK319716 CX665083 CX664451 CX664451 CC013461 CC013461 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664005 CX664006 CX664006 CX664006 CX664006 CX664006 CX641000000000000000000000000000000000000	CX665084 DT041484 DN759581
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	919
8	702 702 758
	14.0 14.0
44444444444444444444444444444444444444	430.2 429.4 429.2
25 25 25 25 25 25 25 25 25 25 25 25 25 2	4 4 4 5 4 5
U U C	υ

ALIGNMENTS

/ · / 4

CNSO9ZRE Arabidopsis thaliana Full-length cDNA Complete sequence from clone GSLTPCHI5ZHO4 of Hormone Treated Callus of strain col-0 of Arabidopsis thaliana (thale cress). BX831565 BX831565. HTC; GSLT cDNA. Arabidopsis thaliana (thale cress).	Arabidopsis Chailand Arabidopsis Chailand Arabidopsis Chailand Bukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis. 1 (Dases I to 1315) Castelli,V., Aury,J.M., Jaillon,O., Wincker,P., Clepet,C., Renard,M., Cruaud,C., Quetier,F., Scarpelli,C., Schachter,V., Temple,G., Caboche,M., Weissenbach,J. and Salanoubat,M. Whole Genome Sequence Comparisons and 'Full-Length' cDNA Sequences: A Combined Approach to Evaluate and Improve Arabidopsis Genome Annotation	Unpublished 2 (bases 1 to 1315) Genoscope. Direct Submission Submitted (18-NOV-2003) Genoscope - Centre National de Sequencage : BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr) The sequences are based on single pass reads.	Life Technologies (a dividision of Invitrogen) members carried out full-length librairies (a dividision of Invitrogen) members carried out sequencing and annotation: Castelli Genosorope members carried out sequencing and annotation: Castelli Schachter V., Mury J.M., Jaillon O., Wincker P., Menard M., Cruaud C., Schachter V., Weissenbach J., Salanoubat M. UNGV INRA. Clepet C., Caboche M. Annotation is based on the June 2003 version of the Arabidopsis genome released by MIPS (Munich Information center for Protein Sequences): 5 prime and 3 prime are assembled with Phrap. http://www.genoscope.cns.fr/externe/sequences/Banque_Projet_EF/Full length	<pre>http://www.genoscope.cns.fr/cgi-bin/ggb/ggb?source=Arabidopsis. Location/Qualifiers</pre>
RESULT 1 CNS 0 9 ZRE LOCUS LOCUS DEFINITION ACCESSION VERYWORDS SOURCE	OKGANISM REFERENCE AUTHORS TITLE	JOURNAL REFERENCE AUTHORS TITLE JOURNAL COMMENT	Contract	FEATURES

Scoring table:

```
/clobe_lib=limu.
//occe=weetc: pcMv-SPORT6.1; Site 1: EcoRI; Site 2: NotI;
//note=weetc: pcMv-SPORT6.1; Site 1: EcoRI; Site 2: NotI;
G. hirsutum L. Texas Marker-1 (TM-I) plants were grown in
G. hirsutum L. Texas A&W University and in the field
a greenhouse at the Texas A&W University and in the field
at the USDA-ARS, New Orleans. The bolls were tagged and
harvested at 3 days before anthesis (3DPA), the day of
harvested at 3 days before anthesis (13DPA), the
anthesis (0 DPA), and 3 days post anthesis (3DPA), tow
ool of ~20 plants. Total RNA was extracted from immature
pool of ~20 plants. Total RNA was extracted from immature
ovules or fiber-bearing ovules. An equal amount of total
ovules or fiber-bearing ovules. An equal amount of total
corp. (Carabad, California) for full-length cDNA library
corp. (Carabad, California) for full-length cDNA library
construction. Messenger RNA was isolated from the total
construction and filter syringe containing oligo (dT). The
RNA using a filter syringe containing oligo (dT). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Superscript Mill reverse transcriptase, and the second-strand CDNA was synthesized using E. coli RNase H, second-strand colonA was synthesized using E. coli RNase H, second-stranded cDNA DNA polymerase I, and DNA ligase. The double-stranded cDNA DNA polymerase I, and DNA ligase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 951 bp mRNA linear EST 31-OCT-2005 hirsutum cDNA, mRNA sequence.
                                                                                                                                                                                   1027 cccedaddeaacaaaccaadaaadadatrrdaddatradccaaadcarcaddcrrc 1086
                                                                                                                                                                                                                                                                 1087 akdescarcaksi-rrcreceacecrrrresrrakcrrkraktrakrrakrakan 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosida; eurosida [1; Malvales; Malvaceae; Malvoideae; Gossypium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to 3 days post anthesis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Texas A&M University
Texas A&M University
Department of Soil & Crop Sciences, MS2474, College Station, TX
77842-2474, USA
Tel: 979 862 2359
Fax: 979 845 0456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 951)
Yang, S.S., Cheung, F., Wei, N.E., Lee, J.J., Ha, M., Stelly, D.M., Yang, S.S., Cheung, F., Wei, N.E., Lee, J.J., Ha, M., C.D. and Chen, Z.J. Thaxton, P., Sze, S.H., Triplett, B.A., Town, C.D. and Chen, Z.J. Upublished (2005)
Contact: Z. Jeffrey Chen
The Chen lab: A Home of Polyploidy (http://polyploidy.tamu.edu)
                                                              GACACGAGCCTAGCGAACAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAAC
                                                                                                                                                                                                                               2703 CAGGGTTCCAAGTCATGTGCTGCGTTTCGGCACTCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                              CCAGGGGGAAAAGAGAACACAGAAGGAGTTCGAGGCATTGGCCCAAAGGGGCCGGATTT
967 daktraadskirtraakkiaaakaadagikkatrokikaritkiratratrakka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Gossypium hirsutum"
/mol type="mRNA"
/cultivar="Texas Maker-1 (TM-1)"
/db xref="texxon:3855"
/tisme_type="Immature ovules"
/dev_stage="Immature ovules (-3 to
DPA) with or without fibers"
/clone_lib="TMO"
                                                                                                                                                                                                                                                                                                                                                        1146 CTCTAAAAACAAACAATGTTCCTATGAAGATGATT 1180
                                                                                                                                                                                                                                                                                                                   2763 GCTTGATCTGCTCTGTGGTGATGTTCATGGTT 2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: zjchen@neo.tamu.edu
TIGR sequence name: GOAB447TR
Seq primer: CAG GAA ACA GCT ATG ACC.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gossypium hirsutum (upland cotton)
Gossypium hirsutum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DT546163
EST1056803 TMO Gossypium
DT546163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DT546163.1 GI:78325889
                                                                                    2583
                                                                                                                                                                  2643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
DT546163
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                    8
                                                                                    ð
                                                                                                                       g
                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC 2522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2523 GAIGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCA 2582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2344 AIGAAAGGGAICAACTICGACCGCC-CAACGGAITGAAGACGCCCCACCCCTICCTGGI 2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCGATGTCGGAGGGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCA 2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   847 AAGIGGATATGICATGACIGGAGIGACGAACATIGCGIGAAATÍCTIGAAGAACTGCTAC 906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGGGTTCGAGT 2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1985 TCTACGGCTTAGCGCCGGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG 2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGCTACTCCGTGACGTGGACCTCCGCGACCTCCCCGGATGGCAAGGTCGAGGGGGC 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              546
                                                                                                                                                                                                                                                                                                                                                              1744
                                                                                                                                                                                                                                                                                                                                                                                                                                          1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGG 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGAGATCATGGCCAAGGACGGGCGCGCGTTCCTCCACGGGGAAATCGCGGGAC 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rriacesecriesricesirriscaletrisaceassaceascalesirricearr 426
                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rrdadarrarddccaadaarddrrcrccardrcrccracc-----dagarddcrrcrg 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2403 GICAAGCACGICGGAGGCGACAIGTICGICAGGGTTCCAAAGGGAGATGCCATTITCAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       547 Accaceeakirekakirakeakirikakeakeririrakearreeakiririakeearree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          667 Girgaigirgingingaaarigergiraaacicaaaargarrgicicaagiacciraar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2165 ATCATGGCACCGACCGCG-ATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2224 ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 307 cgrcriaciccicritaaccicciccaacceraaciritccericaresceircaaces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2045 CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGGTGGTATTACCTGAAAG
                                                                                                                                                                                                                                                                                                                                                            1685 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               133 Aactadccadracriccdrictarccaldgerriaaantccdccriadacirdaccirc
                                                                                                                                                                                                                                                                                                                                                                                                 73 cagadacacaarraacrccdgrgcaagrcaccdacdacdaagcrgcccrcrrcdccardc
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                Length 1315;
                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                    /tissue_type="Hormone Treated Callus"
/ecotype="Col-0"
/plasmid="pCNVSPORT_6"
                                                                                                                                                                                                                                                                                       Score 535.4; DB 6;
Pred. No. 9.4e-143;
0; Mismatches 326;
                                                          /organism="Arabidopsis thaliana"
/mol tvne="mPNA"
                                                                                                                    /clone="GSLTPGH15ZH04"
                                                                                  /mol_type="mRNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                               /gene="At5g54160"
                                                                                                                                                                                                                                                                                           17.4%;
70.0%;
                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                 1 Similarity
780; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1925
                                                                                                                                                                                                                                                                                                Query Match
Best Local Si
Matches 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193
                                                        source
                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
```

원 ò g ò g

ò

```
was blunt-ended using T4 DNA polymerase, digested with MoLf, size-selected using agarose gel electrophoresis, and directionally cloned into the NoI-EcoRV sites of the pCMV-SPORT6.1. The ligated products were transformed using ELECTROMARYMUHIOBTI cells. The library contained 4.2x106 ctu with -100% of colony growth rate. It is estimated that over 60% clones contained full-length cDNA inserts with an average insert size of 1.3>kb. A total of 51,072 colonies were arrayed in duplicate sets each with 133 384-well plates for sequencing and storage, respectively."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2226
                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGATCATGGCCAAGGACGGGCCGGCGTTCCTCTCCACGGGGGAAATCGCGGCACAG 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG 2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC 2585
                                                                                                                                                                                                                                                                                                                                                                                    ñ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCCCCACCAACAACCCCGATGCACCTGTCATGCTAGACCGCATCTTGCGCCTCCTGGCT 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     crcaccagrecercagrectrecgargerecreagereseceragaaerreacers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGTTGGCGGCGGTACTGGAGCTACGCTTAACATGCTTGTCACAAGCACCCTTCTATA 699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGGCATCAACTTTGATTTGCCTCATGTCATTGAGGATGCTCCTGCTTATCCTGGTGTG 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                820 récararéccacéarrécaccarcaccacrécrécrécaagrirrigaagaagrécraceaa 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAACCCAAATGACTCCCACCCAAGTCTCGGATGAGGAAGCCAACTTATTCGCCATGCAA 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rárcercrireccerererecaarierreaceaadareaagaredeerereree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  760 GAGCATGITGGTGGAGACATGITTGAAAGTGTTCCAAAAGGAGAGGCCATCTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGATCATGGCCAAAAGCTGGCCCAGGTGCTTTCCTCTCCCCAAAAGAATTGGCTTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eccerecrecadescentrecerreadadescentrescentrescentrescentrescentre
                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                              Length 951;
                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                            Score 533; DB 10; 1
Pred. No. 4.2e-142;
0; Mismatches 221;
                                                                                                                                                                                                                                                                                                                              / Match
Local Similarity 75.5%;
hes 687; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2526
                                                                                                                                                                                                                                                                                                                                                                                                                                       1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             700
                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                             Best Loca
Matches
```

g

Š

ò 셤 ò 원 ò 8 & 8 & 8

ď

⋧

& g

음

⋧

ઠે

g

8 g ò 셤 8

ద ò

```
1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1724 AGGCGAACCTCTTCGCCATGCAGCTGGCGGCCTCCGTGCTCCCCATGGTCCTAAAGG 1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1904 ACCGGATCTTCCGGCTGCTGGCCACTACTCCGTGCTCACGTGCACCCTCCGCGACCTCC 1963
                                                                                                                                                                                       o mRNA linear EST 15-JUN-2004
raimondii cDNA clone GR_Ea31G13 3',
                                                                                                                                                                                                                                                                                                    Gossypium raimondii
Gossypium raimondii
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids II; Malvales; Malvaceae; Malvoideae; Gossypium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1784 CCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCT 1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1844 CCACGGGGAAATCGCGGCACAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCG 1903
AAGCCAACTTATTCGCCATGCAACTCACCAGTGCCTCAGTCCTTCCCATGGTCTCAAGT 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clome_lib="GR_Ea"
/note="Vector: pCMV.SPORT-6.1; Site_1: NotI; Site_2:
EcoRV, Library made by Invitrogen with RNA supplied by
Wendle lab. Directional cloned into NotI-EV. Colonies
plated/picked by AGI. More glycerol clones held in -80.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1664 AGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ceeccataeaactreactrectesacateateatescaaacresceeccaseretrecter
                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 907)
Kim, H., Yu, Y., Kudrna, D., Hatfield, J., Stum, D., Mueller, C.,
Udall, J.A., Rapp, R.A., Wendel, J.F., Rao, K., Soderlund, C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (2004)
Contact: Rod A. Wing
Arizona Genomics Institute
The University of Arizona
Porbes Building Room 303, Tucson, AZ, 85721-0036, USA
Fax: 520 621 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16.7%; Score 512; DB 8; Length 907; larity 75.6%; Pred. No. 5e-136; Conservative 0; Mismatches 210; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Gossypium raimondii"
/mol_type="mRNA"
/db_xref="taxon:29730"
/clone="GR_Ea1JG13"
/tissue_type="whole seedlings"
/dev_stage="first_true leaves"
/lab_host="DH10B"
                                                                                                                                                                                       CO072302
GR Ea31G13.r GR Ea Gossypium r
mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: rwing@genome.arizona.edu
Plate: 31 row: G column: 13.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Global assembly of Cotton ESTs
                                                                                                                                                                                                                                                   C0072302
C0072302.1 GI:48741783
                                                           2595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .907
                                                                                              939 CCTAGCCTTG
                                                           2586 ACGAGCCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wing, R.A.
                                                                                                                                                                                                                                                                                        EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         662;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                  CO072302
LOCUS
                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                       음
                                                         ò
                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
CATGGCACCGACCACTCAACAACATCTTAACCGGGGAATGTCTGATCACTCCACC 2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2443 AGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGA 2502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAG 2382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 31-OCT-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gossyptium hirsutum
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosida; eurosida II, Malvales; Malvaceae; Malvoideae; Gossypium.
(Dases 1 to 930)
Yang, S.s., Cheung, F., Wei, N.E., Lee, J.J., Ha, M., Stelly, D.M.,
Thaxton, P., Sze, S.H., Triplett, B.A., Town, C.D. and Chen, Z.J.
ESTS from immature ovule (-3 to 3 DPA) of G. hirsutum TM-1
Chipublished (2005)
Contact: Z. Jeffrey Chen
The Chen lab: A Home of Polyploidy (http://polyploidy.tamu.edu)
                                                                                                                                                              2083
                                                                                                                                                                                                                                                                         2143
                                                                                                                                                                                                                                                                                                                                                                                   2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Anddadacdccarctrcardaagagagaraargccacdaragagagagagagagacacacaca 868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    irdicaccaaccacccrictataaaggcarcaactrrgarrrgccrcargrcarraagg 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Anecrecentaricereneraciderericareneraciderericariana anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentaria anecrecentari
                                                                                                                                                                                                                     448
                                                                                                                                                                                                                                                                                                                            508
                                                                                                                                                                                                                                                                                                                                                                                                                                    628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               688
ACCECATCTTECECCTCCTGECTACCTACTCCATCCTCACTTGCTCCTTGCGCACTCTTC 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Texas A&M University
Department of Soil & Crop Sciences, MS2474, College Station, TX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAA
                                                                                                                                                                                                                                                                                                              2144 ACGGGATGACCGCGTTCGAGTATCATGGCACCGGCGATTCAACAAGATCTTTAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ses edecaarcrearcacreracearraceardaacaacaarrerreacacerardarecr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Trgaegeacrcaaaacacreercearerresceececeracresaecracecraaearea
                                                                                            129 CIGATGGCAAAGTGGAGAGACTCTATGGTCTTGGCCCTGTCTGCAAATTCGTGACCAAGA
                                                                                                                                                              2024 ACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGG
                                                                                                                                                                                                                  AAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UTS66827 930 bp mRNA linear ES
EST1077467 TMO Gossypium hirsutum cDNA, mRNA sequence.
DTS66827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2503 AGTICCICAAGAACTGCTACGATGCGCTTCCCAACA 2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .930
/organism="Gossypium hirsutum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIGR sequence name: GOAIE57TR
Seq primer: CAG GAA ACA GCT ATG ACC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gossypium hirsutum (upland cotton)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: zjchen@neo.tamu.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:78346553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77842-2474, USA
Tel: 979 862 2359
Fax: 979 845 0456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DT566827.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  689
                                                                                                                                                                                                                             389
                                                                                                                                                                                                                                                                                                                                        449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2324
                                                                                                                                                                                                                                                                                    2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DT566827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                               ò
                                                                                                             g
                                                                                                                                                                       8
```

```
/clone lib="TWO"
//note="Vector: pcwv-SPORT6.1; Site 1: ECORI; Site 2: NotI;
//note="Twector: pcwv-SPORT6.1; Two Instants were grown in
g. hirsutum T. Texas Marker-1 (TM-I) plants were grown in
a greenhouse at the Texas A&W University and in the field
at the USDA-ARS, New Orleans. The bolls were tagged and
harvested at 3 days before anthesis (-3DPA), the day of
anthesis (0 DPA), and 3 days post anthesis (13DPA) from a
pool of -20 plants. Total RNA was extracted from a
manthesis (0 DPA), and 3 days maked and sent to Invitrogen
Corp. (Carsbad, California) for full-length cDNA library
construction. Messenger RNA was isolated from the total
RNA using a filter syringe containing oligo (dT). The
first-strand cDNA was synthesized from 15 ug mRNA using
SuperScriptTMII reverse transcriptase, and the
second-strand cDNA was synthesized from 15 ug mRNA using
SuperScriptTMIII reverse transcriptase, and the
second-strand cDNA was synthesized from ing E. coli RNase H,
bNA polymerase I, and DNA ligase. The double-stranded cDNA
was blunt-ended using agarose gel electrophoresis, and
directionally cloned into the NotI-EcoRV sites of the
pCWW-SDORTG. I. The ligated products were transformed using
ELECTROMAXTMDH10BT1 cells. The library contained 4.2x106
cfu with -100% of colony growth rate. It is estimated that
over 60% clones contained full-length CDNA inserts with an
average insert size of 1.53-kb. A total of 51,072 colonies
were arrayed in duplicate sets each with 133 384-well
plates for sequencing and storage, respectively."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1867 CTCCCGAACCCCGAAGGAACCCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1927 AGCTACTCCGTGCTCACGTGCACCTCCGCGACGCCGATGGCAAGGTCGAGCGGCTC 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dererleginelardakirtelartelakakeketardenteketakeketaken sel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gcccitractctateaatcaacacaactcctratccacacacacactactactactaaaacat 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           281
                                                                                                                                    days post anthesis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2047 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGATCATGGCCAAGGACGGGCCGGGCGTTCCTCTCCACGGGGAAATCGCGGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ĠŔĠŔĬĊŔĬĠĠĊĨŔŔŖĠĊſĠĠŢĊĊĸĠĠſĠĊŢĬſĊŢĬĠĬĊĊĊĸĸĸĸĠĸĸĠĸĠĊŢſĊĊĸĸĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     222 crcccaccaccaccrcardeccacccarcardergaaccgrartracgrcrcardger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    282 AGCTACAACGTCCTCACTTGCTTACGTACCTTCCCTGGTGGCAAGTGGAAAGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1987 TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 342 TATGGCCTTGGCCTGTCTGCAAATTCTTGACCAAGAAGAAGAAGGTGGTGTCACTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 504.2; DB 10; Length 930;
Pred. No. 9.2e-134;
0; Mismatches 223; Indels 4;
                                                                                                                                       to 3
/mol type="mRNA"
/cultivar="Texas Maker-1 (TM-1)"
/db xref="texon:3635"
/tissue_type="Immature ovules"
/dev stage="Immature ovules"
/down with or without fibers"
/clone_lib="TMO"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 74.5%;
Matches 662; Conservative
```

1;

Gaps ä 1945

120

2005

180

2065

240

2125

300

```
5'and 3' adaptors were used in cloning as follows:
AGTGGTATCAACGCAGAGTGGCCATTACGGCCGGG-3' and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2545 AGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGA 2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721 AGCTAATTCTTGCTGAATGCATCCTTCCTGTGGCCCCAGACACCAGCCTAGCCACCAAGG 780
cloned. 5'and 3' adaptors were used in cloning as foll 5'-AAGCAGTGGTATCAACGCAGAGTGGCCATTACGCCGGG-3' and 5'-ATTCTAGAGGCCGAGAGCGACATG-dT(30)NN-3'. Library we constructed using the Clontech Creator SWART kit and size-selected to contain the 0.5-3 kb size fraction."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1826 GGCCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2006 GCAAGTTCTTGGTCAAGAAGGAGGAGGGGTCTCCATCGCCGCACTCAACGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541 TGCCTCATGTTATTGATGATGCCCCATCTTATCCTGGTGTGGAGAAATGTTGGGGGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGATGCTCATTGCTTGAAGTTCTTGAAGAACTGCTATCAGGCACTTCCAGACAATGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1886 AGGCACCCGTCATGCTCCACCGCATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGT
                                                                                                                                                                                                                                                                                                                       GCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                         GCTCTCTTCGCAACCTCCTGATGGAGGGTTGAGAGGCTCTATGGGCTCGCCCCTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 GCAAGTACTTGACTAGGAACGAAGATGGGGTGTCTGTAGCCCCTCTTCTCCTCATGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2066 AGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCCGACCCGCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 TCCCCTTCAACAAAGCCTATGGAATGACTGCCTTTGAGTATCATGGCACAGATCCTAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361 rcaacaaggrericaacaarggaargreregrearrecaccarraccargaagaaarre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421 fráakaccracaaccerrirgaccecercacercaarrerreargarderecerce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2306 GGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481 GAGCCACCCTTAACATGATCATATCCAAATACCCCACTATTAAGGGCATTAACTTTGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2365 CGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGAGGCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GIGACGACCATIGCGCGAAGIICCICAAGAACIGCIACGAIGCGCIICCCAACAAIGGAA
                                                                                                                                    16.4%; Score 504; DB 4; Length 848; larity 75.6%; Pred. No. 1e-133; Conservative 0; Mismatches 205; Indels
                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAA
                                                                                                                                                                           Matches 638;
                                                                                                                                                                                                                                                          ~
                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                              1946
                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                        Query Match
                                                                                                                                                            Local
                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosida; Vitecae; Vitis.

1 (bases 1 to 848)

3 Goes da Silva,F., Iandolino,A., Lim,H., Baek,J., Leslie,A., Xu,J., Jones,K. and Cook,D.

Expressed sequence tags from Vitis vinifera 'Cabernet sauvignon' berries at various developmental stages

1 Unpublished (2003)

1 Unpublished (2003)

1 Contact: Douglas Cook, PhD

CAES Genome Facility

UC Davis, Plant Pathology

One Shields Ave, Davis, CA 95616, USA

Tel: 530 754 6617

Email: drooxeducdavis.edu
                                                                                                                    2346
                                                                                                                                                                                                 2402
                                                                                                                                                                                                                                                                            2462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CB975481 ST 01-MAY-2003 CAB30007_IIb_Fa_F02 Cabernet Sauvignon Berry Stage I - CAB3 Vitis vinifera_CDNA clone CAB30007_IIb_Fa_F02 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                          AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC 2522
                                                                               641
                                                                                                                                        GATGITGGCGGTGGTACCGGTGCCACGCTTAGCATCGTCTCTAAGTACCCCACCATA 701
                                                                                                                                                                                                                                                                                                                 GTGGAGCATGTTGGTGGAGACATGTTGTAAGTGTACCAAAAGGAGATGCCATTTTCATG 821
                                                                                                                                                                                                                                                                                                                                                                              AAGTGGATATGTCATGATTGGAGCGACGAACACTGCGCCAAGTTTTTGAAGAACTGCTAT 881
  CATGGCACTGATCCTAGATTCAACAAGGTTTTCAACAGGGGAATGTCTGATCACTCTACC 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sauvignon' Clone 8 berries. Samples were collected after berry set from field-grown vines during stage I of berry growth, 17 days after full bloom. The average berry size was 6 milmeters. Sampled vines were located at the University of California, Davis, Experimental Vineyard. CDNAs were made by oligo-dT priming and directionally
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone lib="Cabernet Sauvignon Berry Stage I - CAB3"
/note="Organ: Berry, Vector: pDNR; Site 1: Sfi1; Site 2:
Sfi1; CAB3 is a cDNA library of Vitis vinifera 'Cabernet
                                                                                                                    GATGTCGGAGGCGGCATTGGGCCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                            GTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG
                                        ATTACTATGAAGAAAAAACATACAAAGGCCTTCGAGGCCCTCGAGACCGTGGTC
                                                                           AAAGGCATTAACTTTTGCCTCATGTCATTGAGGATGCTCCTAGCTGTCTTGTAGGT
                                                                                                                                                                                                 ---GGT
                                                                                                                                                                                                 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCC 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Vitis vinifera"
/mol type="mRNA"
/cultivar="cabernet Sauvignon"
/db xref="taxon:29760"
/clone="CAB30007 IID_Fa_F02"
/sex="Hermaphrodite"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /dev_stage="Berry stage I"
/lab_host="DH5alpha"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: ACGGTACCGGACATATGCC. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CB975481
CB975481.1 GI:30298687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . .848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vitis vinifera
Vitis vinifera
                                        2227
                                                                                                                                                                                                 2347
                                                                                                                                                                                                                                                                                                                                                          2463
                                                                                                                                                                                                                                                                                                                                                                                                 822
                                                                                                                                                                                                                                                                                                                                                                                                                                     2523
  522
                                                                             582
                                                                                                                    2287
                                                                                                                                                        642
                                                                                                                                                                                                                                    702
                                                                                                                                                                                                                                                                            2403
                                                                                                                                                                                                                                                                                                                 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
CB975481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                   8686
                                                                   8 6 8
                                                                                                                                                                                                                                                                                                                                                  8 6
                            જ
                                                                                                                                                                                                                                                                                                                                                                                                                       ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
```

2185

360

2245

420

2305

2364

480

2484

099

2424

900

540

2544

720

2285

2345

899

2404

848

908

728

```
853 bp mRNA linear EST 15-JUN-2004
GR Ea30H18.r GR Ea Gossypium raimondii cDNA clone GR Ea30H18 3',
mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2405 CAAGCACGTCGGAGGCGACGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAA 2464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGA 2524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gossypium raimondii
Gossypium raimondii
Gossypium raimondii
Gossypium raimondii
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Wagnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids II; Malvales; Malvaceae; Malvoideae; Gossypium.
I (bases I to 83)
Kim, H., Yu,Y., Kudrna,D., Hatfield,J., Stum,D., Mueller,C.,
Midall,J.A., Rapp,R.A., Wendel,J.F., Rao,K., Soderlund,C. and
CCCTCTCTCTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGA 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               789 ggagcargirdgregggacargirrgrragreggcccaaagcaggregccgirrrcargaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              849 GIGGATALGCCALGATIGGAGCGACGCACACTGCTTAAAATICTIGAAGAAATGCTATGA
                                                               TGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTA
                                                                                                                                                                                                                                                                                                                                                                            609 CATTACCATGAAGAAGCTTCTTGAGACCTACAAAGGCTTTGAAGGCTCTCACATCCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2286 CGAIGICGGAGGGGCACIGGGGCCGIGCICAGCAIGAICGIIGCCAAAIACCCAICAAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              669 gaardriogradgadgadgadgadagadadadadadatadaradaaraddara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2346 GAAAGGGATCAACTICGA-CCGCCCCAACGGAITGAAGACGCCCCACCCCTICCTGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  129 TAAGGGCATTAACTITGATCTGCCCCACGTCATTGAGGATGCCCCATCTTATCCCGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /...organism="Gossypium raimondii"
/mol_type="mRNA"
/mol_type="mRNA"
/db xref="texon:29730"
/clone="GR Ea3018"
/tissue_type="whole seedlings"
/dev stage="first true leaves"
/lab_nost=="blios"
/lone_lib="GR Ea"
/note="vector: pGMV.SPORT-6.1; Site_1: NotI; Site_2:
                                                                                                                           489 igcaairciigergaagaaairccairraacaaggcciaigggaigacigcairigaara
                                                                                                                                                                                              2166 TCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCAC
                                                                                                                                                                                                                                   CATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2525 TGCGCTTCCCAACAATGGAAAGGTGATGCTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         909 ceccrieccesaaaaacecaeereararirereaerearictroce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Rod A. Wing
Arizona Genomics Institute
The University of Arizona
The University of Arizona
The University of Arizona
Tel: 520 626 9595
Fax: 520 621 1259
Email: rwingogenome.arizona.edu
Plate: 30 row: H column: 18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Global assembly of Cotton ESTs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CO071813.1 GI:48741294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wing, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C0071813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2465
                                                                                2106
                                                                                                                                                                                                                                                                                                                                    2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 7
CO071813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                ð
                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  / Mol type="mana" | Ab zref="taxon:35234" | Ab zref="taxon:35234" | Ab zref="taxon:35234" | Ab zref="taxon:35234" | Ab zref="taxon:35234" | Ab zref="taxon:35234" | Ab zref="taxon:35234" | Ab zref="taxon:25000 | Ab zref="taxon:25000 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref="taxon:2500 | Ab zref=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGA 2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGGCGAGCGCCTCCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGATCATGGCCAAGGACGGGCCG-CGTTCCTCCACGGGGAAATCGCGGCACA 1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTCCCGACCCAGAACCCCGAGGCACCCGTCGACCGGATCTTCCGGCTGCTGGC 1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1926 CAGCTACTCCGTGCTCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGGCGGCT 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1986 CTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGC 2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGGAACCTCTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             369 GTATGGCCTTGCTCTGTTTGCAAATTCTTGACCAAGAACGAGGGGGTGTCTCTGTCAG 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   249 CCTCCCTACCAAAAACCCTGATGCCCTGTCATGTTAGACCGTATCTTGCGCCTCCTGGC 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        309 TAGCTACTCCTTACTTGCTCTCTGAAAGATCTTCCTGATGGGAAAGTTGAGAGCTT 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GABACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGCACACCTCTTTGCCATGCAA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     crasccasrecricascraccaardarccrcaaaaaacasccarreaacricsaccrcrr 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAATCATGGCTAAAGCTGGCCCTGGTGCTTTGTCCACATCTGAGATAGCTTCTCA 248
                                                                                                                                                                                                                                             Populus fremontii x Populus angustifolia Populus fremontii x Populus angustifolia Populus fremontii x Populus angustifolia Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Wagnoliophyta; eudicotyledons; core eudicotyledons; rosids; eurosids I; Malpighiales; Salicaceae; Saliceae; Populus. I (bases I to 98) Harding, S. A., Elliott, S. G., Montag, J. D. and Teai, C.-J. Expressed sequence tags from Populus fremontii x Populus
                                                     EST 20-0CT-2005
                          958 bp mRNA linear EST 20-OCT-200
MTUNUL1.P34.F07 NUL Populus fremontii x Populus angustifolia cDNA,
MANA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Chung-Jui Tsai
Biotech Research Center
Michigan Technological University, School of Forest Resources
Environmental Science
1400 Townsend Drive, Houghton, MI 49931-1295, USA
Tel: 906 487 2915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Populus fremontii x Populus angustifolia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10; Length 958;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16.1%; Score 494.8; DB 10; Length 73.7%; Pred. No. 4.9e-131; ive 0; Mismatches 232; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1. .958
                                                                                                                                                                                           DV465073.1 GI:77989246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chtsai@mtu.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 73.7
Matches 656; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       angustifolia
Unpublished (2005)
                                                                                                                                                         DV46507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                 37465073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
```

셤

엄 ò

요 ò 원 ð g ò g ઠે

ઠે 셤 셤 ઠે 셤

ð

g 8 a 8

ઠે

```
1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25
                                                                                                                                                                                                                                                                                                ORGANISM
     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                      ACCESSION
                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2121
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGGCGAGCGCCTCC 1761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAG 1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GA-CCGCCCAACGGATTGAAGACGCCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGC 2420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACGGCCCGGCCGTTCCTCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCAGAAC 1881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCG 2181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAG 2241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGC 2301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTC 2361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GICTGCAAATICTIGACCAAGAACGAAGATGGTGTCACTCTTTCCGCCCTTAGTCTCATG 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              364 AATCAAGACAAGGTCCTTATGGAGAGCTGGTACTTGAAAGATGCTGTGCTGGATGGT 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGGTCCAGGTGCTTTCTTGTCCCCAAAGAAGTGGCTTCCAAGCTCCCACCAAC 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTTGCTCCTTGCGTACCCTTCCTGATGGCAAAGTGGAAAGACTATATGGCCTTGGCCCT 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATTTGCCTCATGTCATTGAGGATGCTCCTAGCTGTCCCGGTGTGGAGCATGTTGGTGGA 723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACATGTTTGTAAGTGTACCAAAAGGAGATGCCATTTTCATGAAGTGGATATGTCATGAT 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAGCGAACGAACACTGCGCCAAGTTTTTGAAGAACTGCTATGAAGCTTTGCCAGACAAC 843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
EcoRV; Library made by Invitrogen with RNA supplied by Wendle lab. Directional cloned into NotI-EV. Colonies plated/picked by AGI. More glycerol clones held in -80.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cenciande de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica del constantica de la constantica de la constantica del constantica de la constantica de la constantica de la constantica de la constantica de la constantica del constantica del constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica del constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica del constantica del constantica del constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica de la constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del constantica del con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAATTCCATTCAACAAGGCCTATGGTATGACTGCATTTGAGTACCATGGCACTGGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATTCAACAAGGTTTTCAACAAGGGAATGTCTGATCACTCTACCATCAACCATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTCTCGATACATATGATGGTTTCCAAGGACTAAAAACATTGGTCGATGTTGGCGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cccacccaactrocaargagaagcccacrrarroccrargcaacrroccagracarca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCGTCTACGGCTTAGCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Accestraccardenterenterentalecentralecenteralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralecentralec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACATGTTCGTCGACGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAAT
                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                        ï
                                                                                                                                                                                                                                                            Length 853;
                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                 Score 490.8; DB 8;
Pred. No. 6.9e-130;
0; Mismatches 217;
                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 74.4%;
Matches 632; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAAGGTGA 2550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                || || ||| GGGAAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2541
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              844
                                                                                                                                                          ORIGIN
```

g

g

8 셤 ઠ

8 8 8

a

a ઠે g 8 6

ò 용 ઠે 셤

ò

```
2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGATCATGGCCAAGGACGGCCCGGGCGCTTCCTCCACGGGGAAATCGCGGCACAG 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2107 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2166
                                                                                                                                         Gossypium raimondii
Gossypium raimondii
Bukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosida II; Malvales; Malvaceae; Malvoideae; Gossypium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412 GCCCTCAGTCTCATGAATCAAGACAAGGTCCTTATGGAGAGCTGGTACTTGAAAGAT 471
     'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone lib="GR Ea"
/note="Vector: pGMV.SPORT-6.1; Site 1: NotI; Site 2:
/note="Vector: pGMV.SPORT-6.1; Site 1: NotI; Site 2:
ECRY; Library made by Invitrogen with RNA supplied by
Wendle lab. Directional cloned into NotI:EV. Colonies
plated/picked by AGI. More glycerol clones held in -80."
     Ea47M18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCACCAGTGCCTCAGTCCTTCCCATGGTCCTCAAGTCGGCCATAGAACTTGACCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAACCCAAATGACTCCCACCCAAGTCTCGGATGAGGAAGCCAACTTATTCGCCATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    crececaceaaceceargeacecerererererasecrecererrererererere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Acchachecancenteachnechechechenterechentechandrechendene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               randencindeccinenciaaarineerdaccaadaardaadardeccineacrinine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                     1 (bases 1 to 864)
Kim,H., Yu,Y., Kudrna,D., Hatfield,J., Stum,D., Mueller,C.,
Udall,J.A., Rapp,R.A., Wendel,J.F., Rao,K., Soderlund,C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
     Ea Gossypium raimondii cDNA clone GR_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 864;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                 Wing,R.A.
Global assembly of Cotton ESTs
Unpublished (2004)
Contact: Rod A. Wing
Arizona Genomics Institute
The University of Arizona
Forbes Building Room 303, Tucson, AZ, 85721-0036,
Fax: 520 621 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.864
/organism="Gossypium raimondii"
/mol_type="mRNA"
/db_xref="taxon:29730"
/clone="GR_Ea47M18"
/tlsue_type="whole seedlings"
/dev_stage="first true leaves"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 489.6; DB 8;
Pred. No. 1.5e-129;
0; Mismatches 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: rwing@genome.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plate: 47 row: M column: 18.
Location/Qualifiers
... _______GR__Ea Gos
mRNA sequence.
CO082948
CO082948.1 GI:48752429
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 75.9%;
Matches 617; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

ð

EST 15-JUN-2004

linear

mRNA

ď 864

C0082948

RESULT 8 CO082948 LOCUS

```
RNA from three samples was mixed and sent to Invitrogen Corp. (Carsbad, California) for full-length CDNA library construction. Messenger RNA was isolated from the total RNA using a filter syringe containing oligo (dT). The first-strand CDNA was synthesized from 15 ug mRNA using SuperscriptTMIII reverse transcriptes, and the RNA polymerase I, and DNA ligase. The double-stranded CDNA was blunt-ended using T4 DNA polymerase, digested with NotI, size-selected using T4 DNA polymerase, digested with NotI, size-selected using agarose gel electrophoresis, and directionally cloned into the NotI-EcoNV sites of the pow. SPORME. I. The ligated products were transformed using ELECTROMAXTMDH10BT1 cells. The library contained 4.2x106 ELECTROMAXTMDH10BT1 cells. The library contained 4.2x106 cft with ~100% of colony growth rate. It is estimated that over 60% clones contained full-length CDNA inserts with an average insert size of 1.53-kb. A total of 51,072 colonies were arrayed in duplicate sets each with 133 384-well plates for sequencing and storage, respectively."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2107 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2167 CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC 2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CIGGCGAGCGCCTCCGGGATGCTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGTCGGAGGCGGACTGGGCGCGGCATGATGCCAAATACCCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2347 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>alakis de propiratoros de la propirator de la propiració de la propiració de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la propiración del la propiración de la propiración del la propiración de la propiración de la propiración de la propiración de la propiración de la propiración de la p</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2227 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 derengerigeargarinesarreagasasasasasasasasasarasarraagarinaasas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCTACTCCGTGCTCCACGTGCACCTCCGCGATGCCAAGGTCGAGCTCGAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 282 AGCTACAACGTCCTCACTTGCTTCCTTCCTTCTCTGATGGCAAAGTGGAAAGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1987 TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2047 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGATCATGGCCAAGGACGGGCCGCGTTCCTCCACGGGGAAATCGCGGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1687 GAGACCCAGATGACCCCCAACCCCAAGTCTCGGACGACGAGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>daaaktrcaaaitgacacccacccaagrciccagargaggaagccaactraritcgcraigcaa</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15.9%; Score 489.2; DB 10; Length
74.8%; Pred. No. 2e-129;
ive 0; Mismatches 213; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 639; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | . . 895 | / organism= Gossypium hirsutum" | / mol type="mRNA" | / mol type="mRNA" | / mol type="mRNA" | / mol type="mRNA" | / mol type="mRNA" | / mol type="mRNA" | / mol type="mandure ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature ovules" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage="lmmature" | / dow stage=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gossyplum Intrautum

Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Bukaryota, Viridiplantae; Streptophyta; Eudicotyledons;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
Spermatophyta; Magnoliophyta; eudicotyledons;
rosids; eurosida II; Malvales; Malvaceae; Malvoideae; Gossypium.

E 1 (bases 1 to 895)
Yang, S.S., Cheung, F., Wei, N.E., Lee, J.J., Ha,M., Stelly, D.M.,
Thaxton, P., Sze, S.H., Triplett, B.A., Town, C.D. and Chen, Z.J.
ESTS from immature ovule (-3 to 3 DPA) of G. hirsutum TM-1
Unpublished (2005)
Contact: Z. Jeffrey Chen
The Chen lab: A Home of Polyploidy (http://polyploidy.tamu.edu)
Texas A&M University
Department of Soil & Crop Sciences, MS2474, College Station, TX
77842-2474, USA
Tel: 979 862 2359
Fax: 979 845 0456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST 31-OCT-2005
                                                                                                                                                                                                                                                                                                 2286
                                                                                                                                                                                                                                                                                                                                                                                                                                            2346
                                                                                                                                                      2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          771
                                                                                                                                                                                                                                                                                                                                                                        651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     831
                                                                                                                                                                                                                         591
                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGTCGGAGGCGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGGCAICAACITIGATTIGCCTCAIGTCATIGAGGAIGCTCCTGCTTAICCIGGIGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                              895 bp mRNA linear ES
EST1068649 TMO Gossypium hirsutum CDNA, mRNA sequence.
DT558009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2466 TGGATATGCCATGACTGGACGACCATTGC 2498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bmail: zjchen@neo.tamu.edu
TIGR sequence name: GOAF684TRC
Seq primer: CAG GAA ACA GCT ATG ACC.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gossypium hirsutum (upland cotton)
Gossypium hirsutum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DT558009.1 GI:78337735
                                                                                                                                                                                                                                            532
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   832
                                                                                                                                                                         2167
                                                                                                                                                                                                                                                                                                                   2227
                                                                                                                                                                                                                                                                                                                                                                                       592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
DT558009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
```

2346

2286

641

581

521

2046

1986

281

341

1926

221

Gapa 2;

Length 895;

8 & 8

g ક

g Š

∂

8 6

ò

2106

461

2263

642

2083

462

402

2023

유

윤 8 g

8

```
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons;
rosids; eurosids II; Sapindales; Rutaceae; Citrus x Poncirus.
I (bases I to 961)
Close, T.J., Roose, M.L., Becker, O., Darsow, J., Federici, C.F.,
Fenton, R.D., Wanamaker, S., Choi, Y. Gand Kingan, T.
Development of EST Resources and New Genetic Markers for California Citrus - Swingle citrumelo nematode-challenged roots - UCRCPOI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CX664219
UCRCP01 008 G04 T7 Swingle citrumelo nematode-challenged root cDNA library - UCRCP01 Citrus x paradisi x Poncirus trifoliata cDNA clone UCRCP01 008 T7 G04, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2264 TCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGA 2323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2324 TCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAG 2382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2383 ACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAA 2442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2144 ACGGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACC 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        643 TIGAGGGACTCAAAACACTGGTCGATGTTGGCGGCGGTACTGGAGCTACGTTAACATGA 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCCAAAAGAATTGGCTTCCCAGCTCCCCACCAGCAACCCCGATGCACCTGTCATGCTAG 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCGGATCTTCCGGCTGCTGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCC
                                                                                              343 crearescaasiresadascacreraresrerrescecererescaaarresrendada
                                                                                                                                                                                                                                                                                                                                                                          403 Argandardecercacretrececercaerererandarea de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Arganda de Argand
                                                                                                                                                                                                                                                                                                                                                                                                                                           2084 AAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               463 AGAGCTGGTACTTGAAAGATGCCGTGCTGGAAGGTGGAATTCCCTTCAACAAAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    583 GGGGAATGTCTGATCACTCTACCATTACCATGAAGAAGATTCTTGAGACCTATGATGGCT
                                                                                                                                                                                      .964 CCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGA
                                                                                                                                                                                                                                                                                                               ACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2204 GGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2443 AGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Timothy J. Close
Contact: Timothy J. Close
Department of Botany & Plant Sciences
University of Callifornia
Riverside, CA 92521-0124, USA
Tel: 909-787-4437
Email: timothy.close@ucr.edu
Seq primer: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CX664219 _ _ _ _ _ CX664219.1 GI:57922195
   223
                                                                 1904
                                                                                                                            283
                                                                                                                                                                                                                                                                                                                  2024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
CX664219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                             ð
                                                                                                                  ద
                                                                                                                                                                                   ò
                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                              GR Ea05J07.f GR Ea Gossypium raimondii cDNA clone GR Ea05J07 5', mRNA sequence.
CO087218.1 GI:48777852
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1784 CCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGGCGGGGTTCCTCT 1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1664 AGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACG 1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1724 AGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGG 1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gossypium raimondii
Gossypium raimondii
Gossypium raimondii
Gossypium raimondii
Gossypium raimondii
Spermatophyta; Viribaliplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Osbyta; eudicotyledons; core eudicotyledons;
rosids; eurosids II, Malvales; Malvaceae; Malvoideae; Gossypium.
I (bases 1 to 880)
Kim, H., Yu, X., Kudrna, D., Hatfield, J., Stum, D., Mueller, C.,
Udall, J.A., Rapp, R.A., Wendel, J.F., Rao, K., Soderlund, C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGCCAACTTATTCGCCATGCAACTCACCAGTGCCTCAGTCCTTCCCATGGTCCTAAGT 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ceeccatacaactreactrectecacatreateccaaacreeccaeerectricerer 222
/clone lib="GR_ Ea" /clone lib="GR_ Ea" /clone lib="GR_ Ea" /note="Vector: pGMV.SPORT-6.1; Site 1: NotI; Site 2: EcoR', Library made by Invitrogen with RNA supplied by Wendle lab. Directional cloned into NotI-EV. Colonies plated/picked by AGI. More glycerol clones held in -80.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Rod A. Wing
Contact: Rod A. Wing
Ariona English Arizona
Forbes Building Room 303, Tucson, AZ, 85721-0036, USA
Tel: 520 626 9595
Fax: 520 621 1259
Email: rwing@genome.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15.9%; Score 489; DB 8; Length 880; Similarity 75.5%; Pred. No. 2.3e-129; Conservative 0; Mismatches 201; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Gossypium raimondii"
|mol_type="mkmA"
|db_xref="taxon:29730"
|clone="GR_Ea05507"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="whole seedlings"
/dev_stage="first_true_leaves"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rwing@genome.arizona.edu
05 row: J column: 07.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Global assembly of Cotton ESTs
Unpublished (2004)
                                                                                                                                                                                                                          TGCGCTTCCCAACA 2538
                                                                                                                                                                                                                                                                                     882 AĞCTTİĞCCAGÁCA 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plate: 05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      633;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1844
                                                                                                 2466
                                                                                                                                                            822
                                                                                                                                                                                                                          2525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           103
                                       762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                 C0087218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
```

셤 ò

셤 ò

```
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: timothy.close@ucr.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fax: 909-787-4437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sed primer: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        859
                                                                                                                                                                                                                                                                                                                                                                       2300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2419
                                                                                                                                                                                                                                                                                                                                  619
                                                                                                                                                                                                                                                                                                                                                                                                                  619
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CX668414
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                         쉽
                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                  셤
                                                                                                            ò
                                     8
                                                                                                                 /tissue_type="root"
/dev atage="seedling"
/lab_host="E.coli TJ7121"
/clone lib="Swingle citrumelo nematode-challenged root
cDNA library - UCRCP01"
/clone lib="Swingle citrumelo nematode-challenged root
cDNA library - UCRCP01"
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
/note="Vector: Lambda Uni-ZAP XR, excised phagemid;
/note="Vector: Lambda Uni-ZAP XR, excised from extracted using Citrus
/conteaninated soil from the UC Riverside Citrus Research
/contex then suspended in water and added to pots (Darsow)
/creat RNA Reagent (Invitrogen) followed by clipping them away from
/creat collection times, pooled from each of the two
/collection times, pooled from each of the two
/collection times, pooled from each of the two
/collection times, pooled from each of the two
/collection times, pooled from each of the two
/collection times, pooled from each of the two
/clones were in vivo excised to give a population of
/pBluescript SK(-) phagemids (Fenton, Close lab). Phagemids
/pBluescript SK(-) phagemids (Fenton, Close lab). Phagemids
/mand DNA sequences determined bi-directionally using and DNA sequences determined bi-directionally using an ABI3730 at the University of California Riverside
/instrumentation Pacility (Choi, Kingan). Chromatogram
/files were downloaded by FTP by Close, then processed by
// wanamaker (Close lab) using the HarvEST pipeline
// harvest ucr.edu) to remove vector and cloning
// high quality region. Sequences that retained a phred
// high quality region. Sequences that retained a phred
// region of at least loo bases were assembled, then chimeras
// were removed following manual inspection of assembled
// removal steps were submitted to GenBank."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1880 ACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGGCCAGCTACTCCGTGC 1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1940 TCACGIGCACCTCCGCGACTCGCAATGGCAAGGGGGGGCGCTCTACGGCTTAAGCGC 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cggtgtgcaagttcttggtcaagaacgaggacggggtctccatcgcgcactcaacttga 2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1700 CCCCGACCCAAGTCTCGGACGACGAGGGGAACCTCTTCGCCATGCAGCTGGCGAGCGCT 1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1640 GGAAGAGAGAGAGAGAGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGA 1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                260 ACCCAGATGCCCATATCGTGCTTGATGGTTGTTGCGCCTTCTGGCGAGCTATTCAGTCC 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     140 casicrisccratestratarcasccarisascrisarctriasasarcarcscra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGIGCICCCCAIGGICCIAAAGGCCGCCAICGAGAICGACCTCCICGAGAICAIGGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1820 AGACGGGCCGGGGTTCCTCCACGGGGGAAATCGCGGCACAGGTCCCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       grccagcccaaggrcagargaagagggaaaactcrcragccargcaarraaccagrgccr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
'organism="Citrus x paradisi x Poncirus trifoliata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15.9%; Score 488.6; DB 9; Length 961;
llarity 71.3%; Pred. No. 3.1e-129;
Conservative 0; Mismatches 269; Indels 2
                                                                  /db xref="taxon:309804"
/clone="UCRCP01_008_T7_G04"
/tissue_type="root"
                               /mol_type="mRNA"
/cultivar="Swingle"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 672; Conservat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
```

```
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus
Citrus x paradisi survey
Citrus x paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi paradisi parad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CX668414 linear EST 19-JAN-2005
UCRCP01 037_E09_T7 Swingle citrumelo nematode-challenged root cDNA
library - UGRCP01 Citrus x paradisi x Poncirus trifoliata cDNA
clone UCRCP01_037_T7_E09, mRNA sequence.
CX668414
CX668414.1 GI:57927201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2479 ACTGGAGTGACGACATTGCGGAAGTTCCTCAAGAACTGCTACGATGCGGTTCCCAACA 2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGACATGTTCGTCGAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATG 2478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2240 AGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCG 2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arriciaisciais de de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la controdica de la
CCGTTTGTAAATTCCTCACTAAAAATGAAGATGGTGTTACACTTTCCGATCTTTGTCTCA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      799 dadacardrirdriadrotriccaadggacargccarrirtrarcadgrigarardricard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u> aaaircirdaaaarracaaadeerrreaadeccrcaacrcagirdreaccirdecerc</u>
                                                                                                                                                        2060 TGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAG
                                                                                                                                                                                                                                                                                                439 TGAACCAAGACAAGGTTCTCATGGAGAGCTGGTACTACTTAAAAGATGCAGTGCTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2120 GCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1180 CGCGATTCAACAAGATCTTTAACCGGGAATGTCTGATCACTCCACCATTACTATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  559 raagairicaacaagairrircaacaarggaargiccrcrcarrcraccarraccargaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACTGGGGCCGTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'organism="Citrus x paradisi x Poncirus trifoliata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2539 ATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCC 2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Timothy J. Close
Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124, USA
Tel: 909-787-3318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol type="mRNA"
/cultivar="Swingle"
/db_xref="taxon:309804"
```

2310

743

```
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermacophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids II; Sapindales; Rutaceae; Citrus x Poncirus.
1 (bases I to 964)
Close, T.J., Roose, M.L., Becker, O., Darsow, J., Federici, C.F.,
Fenton, R.D., Wanamaker, S., Choi, Y.G and Kingan, T.
Ponton, R.D., Wanamaker, S., Choi, Y.G and Kingan, T.
Citrus - Swingle citrumelo nematode-challenged roots - UCRCPOI
Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UCRCPOI_007_F10_T7 Swingle citrumelo nematode-challenged root cDNA-library - UCRCPOI_01 Citrus x paradisi x Poncirus trifoliata cDNA clone UCRCPO1_007_T7_F10, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2370 CAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTC 2429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2430 GTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGAC 2489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2490 GACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTG 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               863
                                                                                                                                                                                                                                                                                                                                      564 AAGATTTTCAACAATGGAATGTCCTCTCATTCTACCATTACCATGAAGAAATTCTTGAA 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         444 AAGGTTCTCATGGAGAGCTGGTACTTAAAAGATGCAGTGCTTGAAGGTGGCATTCCA 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              864 GAGCACTGCGTGAAATTCTTGAAGAACTGCTATGAAGCACTTCCAGTAAATGGGAAAGTC 923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        504 TITAACAAGGCCTATGGGATGAATGCATTCGATTACCATGGCAAAGATCTAAGATTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         624 AATTACAAAGGGTTTGAAGGCCTCAACTCAGTTGTCGACGTTGGTGGTGGTAATTGGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2311 GTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGA-CCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   684 ACACTTAACATGATTATCTCCCAAGTATCCATCGATTAAAGGCATCAACTTTGATTTGCCA
                                                                                              2131 TTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAAC
                                                                                                                                                                                                                                                             2191 AAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                            ACATACAAGGGTTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Citrus x paradisi x Poncirus trifoliata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /mol_type='mRNA"

/culcivar='gavingle"

/db xref='taxon:309804"

/clone='UCRCP01_007_T7_F10"

/tissum_type='root"

/dev stage='seedling"

/lab_host='R. coll TUC121"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fax: 909-787-4437
Email: timothy.close@ucr.edu
Seq primer: T7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Timothy J. Close
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CX664056.1 GI:57922014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 909-787-3318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2550 ATCGTTGC 2557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     924 ATTGTTGC 931
                                                                                                                                                                                                                                                                                                                                                                                                                            2251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
CX664056/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                     ઠે
                                                                                                                                                                       g
                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                       COURTINEARY DUCKPUL.

COURTINEARY SITE_2: XhoI; Twelve seedlings were transplanted from cones to 4 inch pots of sand mix, then grown in greenhouses (Darsow, Becker lab). Citrus nematodes (Tylanchlus semipenitrans) were extracted from nematodes (Tylanchlus semipenitrans) were extracted from nematodes (Tylanchlus semipenitrans) were extracted from contaminated soil from the UC Riverside Citrus Research Center then suspended in water and added to pots (Darsow). Growing roots were collected by clipping them away from the old root ball 24 hr and 4 days after inoculation (Federici). Total RNA was extracted using Concert Plant RNA Reagent (Invitrogen) followed by RNeasy (Qiagen), an equal amount of RNA was pooled from each of the two collection times, poly(A) RNA was purified using Oligotex (Qiagen), a cDNA library was made using a cDNA synthesis kit (Stratagene), then 0.45 million primary lambda cDNA clones were in vivo excised to give a population of pBluescript SK(-) phagemids (Fenton, Close lab). Phagemids were plated, plasmid DNA purified, cDNA clones archived, and DNA sequences determined bi-directionally using an AB13730 at the University of California Riverside
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            high quality region. Sequences that retained a phred 17 region of at least 100 bases were assembled, then chimeras were removed following manual inspection of assemblies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2071 AAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCA 2130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCG 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1831 GGCGCGTTCCTCTCCACGGGGGAAATCGCGGCACAGCTCCCGACCCAGAACCCCGAGGCA 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAG 2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGAC 2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCTCGGATGAAGAGCCAAACCTCTTGGCCATGCAATTAACCAGTGCCTCAGTCTTGCCT 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATECTITICATETICICEAAAAGACATAGCITICICAGCIGCCACAAAGAACCCAGAIGCC 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATATCGTGCTTGATCGTATATTGCGCCTTCTGGCGAGCTATTCAGTCCTTAATTGCTCT 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIGGCAATCTCCCCGACGCAAAGTTGAGAGGCTTTATGGCCTTGCCCCCGTTTGTAAA 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (http://harvest.ucr.edu) to remove vector and cloning oligo sequences and various contaminants, and to trim to high quality region. Sequences that retained a phred 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Institute of Integrative Genome Biology Genomics Core Instrumentation Facility, (Ghoi, Kingan). Chromatogram files were downloaded by FTP by Close, then processed by Wanamaker (Close lab) using the HarvEST pipeline
                                                                             /dev_stage="seedling"
/lab_host="E. coli TUC121"
/clome_lib="Swingle_citrumelo_nematode-challenged_root
cDNA_library - UCRCP01"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Close, Roose, Wanamaker). Sequences that survived all removal steps were submitted to GenBank."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Argernerca Antorocción reasocina de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TICCICACIAAAAATGAAGATGGTGTTACACITITCCGATCTTTGTCTCATGAACCAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGAGAGGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24 AAAAAAAAAAAAAAAAATGGGTTCAACCAGTTCAGAAACTCAAATAAGTCCAGCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .;
H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 931;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 484.8; DB 9;
Pred. No. 3.9e-128;
0; Mismatches 257;
clone="UCRCP01_037_T7_E09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15.8%;
71.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              650;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
```

g

ઠે g 8

요 ઠે ద 8 g

ò 셤 õ g

us-10-702-319a-113.rst

```
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                               요
                                                                                                                                                                                      ð
                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                      ò
             CLOURE LIDE-SWAINGLE CITCHUMEIO DEMRATOGE-CHAILENGED TOOUR ADDRA INDEATY - UCRCPOINT TWENEY excised phagemid; NOTES-WVECTOR: Lambda Uni-ZAP XR, excised phagemid; Site 1: ECORI; Site 2: Xhol; Twelve seedlings were transplanted from cones to 4 inch pots of sand mix, then grown in greenhouses (Darsow, Becker lab). Citrus contraminated soil from the UC Riverside Citrus Research contraminated soil from the UC Riverside Citrus Research (Growing roots were collected by clipping them away from the old root ball 24 hr and 4 days after inoculation (Rederici). Total RNA was extracted using Concert Plant RNA Reagent (Invitrogen) followed by RNeasy (Qiagen), an equal amount of RNA was pooled from each of the two collection times, poly(A) RNA was purified using Oligotex (Qiagen), a CNA library was made using a CNA synthesis kit (Stratagene), then 0.45 million primary lambda CDNA clones were in vivo excised to give a population of pBluescript & K(-) phagemids (Fenton, Close lab). Phagemids were plated, plasmid DNA purified, cDNA clones archived, and DNA sequences determined bi-directionally using an AB13730 at the University of California Riverside Institute of Integrative Genome Biology Genomics Core Institute of Integrative Genome Biology Genomics Core Institute action Pacility, (Chois, Kingan). Chromatogram files were downloaded by FTP by Close, then processed by Wanamaker (Close lab) using the HarvEST pipeline (http://harvest.ucr.edu) to remove contaminants, and to trim to a high quality region. Sequences that retained a phred 17 region of at least 100 bases were assembled, then chimeras were removed following manual inspection of assemblies removed following manual inspection of assemblies removed following manual inspection of assemblies.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2195 TCTTTAACCGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACAT 2254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2255 ACAAGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGC 2314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2315 TCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGA-CCGCCCCAAC 2373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCA 2134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2135 ACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAACAAGA 2194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1895 TCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCCACGTGCACCCTCC 1954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGACCTCCCCGATGGCAAAGGTCGAGGGGCTCTACGGCTTAGGGCTGCGATGCTAGTTCT 2014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAA 2074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               663 TITICAACAATGGAATGTCTTCTCATTCTACCATTACCATGAAGAAATTCTTGAAAATT 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            843 İCACTAAAATGAAĞATĞGAĞITAÇATTAÇÇENIÇITTGICTCATGAACAAĞACAAĞG 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                783 TICTCATGGAGAGCTGGTACTACTTAAAAGATGCAGTGCTTGAAGGTGGCATTCCATTA 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             723 ACAAGGCCTATGGGATGAATGCATTCGATTACCACGGCAAAGATCTAAGATTCAACAAGA 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            963 icericiricáricerarariececrircieceaciáricacicáricaricatracian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    903 dcaarcicciccaacecaaaetreaeaeecirraaeecrireccececeristaarice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          603 ACAAAGGGTTTTGAAGGCCTCAACTCAGTTGTCGACGTTGGTGGAAATTGGAGCCAAC
nematode-challenged root
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 9; Length 964;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15.7%; Score 480.6; DB 9; Length 5
72.6%; Pred. No. 6.4e-127;
.ive 0; Mismatches 239; Indels
          citrumelo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 72.6
Matches 635; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
```

g

엄 ò

ઠે

셤

δ 셤 ઠે 셤 ò ð

ઠે

```
/mol type="mrkNa"
/mol type="mrkNa"
/mol type="mrkNa"
/clone="urrCrop1_005_T3_E01"
/clone="urrCrop1_005_T3_E01"
/tissue_type="root"
/tissue_type="root"
/lab_host="E. coli TuCl21"
/lab_host="E. coli TuCl21"
/lab_host="E. coli TuCl21"
/lab_host="E. coli TuCl21"
/lab_host="E. coli TuCl21"
/lab_host="E. coli TuCl21"
/lone lib="Swingle citrumelo nematode-challenged root
/clone lib="Swingle citrumelo nematode-challenged root
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised phagemid;
/note="vector: lambda Uni-ZAP_KR, excised Uni-ZAP_KR, excised Uni-ZAP_KR, excised Uni-ZAP_KR, excised Uni-ZAP_KR, excised Uni-ZAP_KR, excised Uni-ZAP_KR, excised Uni-ZAP_KR, excised Uni-ZAP_KR, excised Uni-ZAP_KR, excis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus trifoliata
Citrus x paradisi x Poncirus
Citrus x paradisi y Conce cudicotyledons;
Spermatophyta; Magnoliophyta; eudicotyledons;
Cosids; eurosida II; Sapindales; Rutaceae; Citrus x Poncirus.
I (bases I to 91);
Close, T.J., Roose, M.L., Becker, O., Darsow, J., Federici, C.F.,
Fentron, R.D., Wanamaker, S., Choi, Y.G and Kingan, T.
Development of EST Resources and New Genetic Markers for California Citrus - Swingle citrumelo nematode-challenged roots - UCRCPOI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CX663706 UCRCPO1 005 E01 T3 Swingle citrumelo nematode-challenged root cDNA library - UCRCPO1 Citrus x paradisi x Poncirus trifoliata cDNA clone UCRCPO1 005_T3_E01, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                              2613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         243 AIGICGACTGCAICAIGITGGCICAIAACCCGGGIGGCAAAGAAGAAGAAGAACAAGAAGI 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      483 TIATICAGGAIGCICCAGCITITCCIGGIGICGAGCAIGIIGGGGGAGACAIGITIGIIA 424
                                                                                                                                                                                                                                             ATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCG
                                                                                                                                                                                                                                                                                                                         ACATCGACTGCATCATGTTGGCCCAACCCCAGGCGGAAAGGAGGACACAGAAGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2674 TCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCG
                                                                                                                                   TTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCC
                                                                                2434 GCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Citrus x paradisi x Poncirus trifoliata"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2734 GCACTCACGTCATGGAGTTCCTGAAGACCGCTTGA 2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           123 ATACTTACATTATGGAATTTCTCAAGAGTGCTTGA 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Timothy J. Close
Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124, USA
Tel: 909-787-3318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fax: 909-787-4437
Email: timothy.close@ucr.edu
Seg primer: T3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CX663706
CX663706.1 GI:57921620
                                                                                                                                                                                                                                                                                                                                                  363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2614
                                                                                                                                                                                                                                                                      2494
                                                                                                                                                                                                                                                                                                                                                                                                                               2554
                                                                                                                                                                                      423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 14
CX663706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEATURES
```

Center then suspended in water and added to pots (Darsow). Growing roots were collected by clipping them away from the old root ball 24 hr and 4 days after inoculation (Federici). Total RNA was extracted using Concert Plant RNA Reagent (Invitrogen) followed by RNeasy (Qiagen), an equal amount of RNA was pooled from each of the two collection times, poly(A) RNA was purified using Oligotex (Qiagen), a CDNA library was made using a cDNA synthesis kit (Stratagene), then 0.45 million primary lambda cDNA clones were in vivo excised to give a population of pBluescript SK(-) phagemide (Fenton, Close lab). Phagemids were plated, plasmid DNA purified, cDNA clones archived, and DNA sequences determined bl-directionally using an AB13730 at the University of California Riverside Institute of Integrative Genome Biology Genomics Core Institute of Integrative Genome Biology Genomics Core Institute action Facility, (Chol, Kingan). Chromatogram files were downloaded by FTP by Close, then processed by Wanamaker (Close lab) using the HarvEST pipeline (http://harvest.ucr.edu) to remove vector and cloning oligo sequences and various contaminants, and to trim to a high quality region of at least 100 bases were assembled, then chimeras were removed following manual inspection of assemblies (Close, Roose, Wanamaker). Sequences that survived all removal steps were submitted to Genbank."

1759 1999 2119 2179 1879 GGAAGAGAGAGAAGAGAGAGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCCAGATGA 1699 2180 CGCGATTCAACAAGATCTTTAACCGGGAATGTCTGATCACTCCACCATTACTATGAAGA 2239 CGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCCATCGCCGCACTCAACTTGA 2059 138 618 CAGTCTTGCCTATGGTTCTCAAATCAGCCATTGAGCTTGATCTTTTAGAGATCATAGCTA 198 259 Acccadardeceararcerecirdarceraringedecerrerededaderarreagree 318 CCGTTTGTAAATTCCTCACTAAAATGAAGATGGTGTTACACTTTCCGATCTTTGTCTCA 438 CCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCA 319 TTAATTGCTCTTTGCGCAATCTCCCCCGACGCAAAGTTGAGAGGCTTTATGGCCTTTGCCC TGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAG TGAACCAAGACAAGGTTCTCATGGAGGTGGTACTACTTAAAAGATGCAGTGCTTGAAG GIGGCATTCCATTTAACAAGGCCTATGGGATGAATGCATTCGATTACCACGGCAAAGATC GGAAAAGAGGGAGAAAAAAAAGGACAAAATGGGTTCAACCAGTTCAGAAACTCAAATAA 79 GTCCAGCCCAAGGCTCGGATGAAGAGGCAAACCTCTTGGCCATGCAATTAACCAGTGCCT AGGACGGGCGGGGGTTCCTCTCCACGGGGGAAATCGCGGGCACAGGTCCCGACCCAGA 199 AAGCTGGGCCCGATGCTTTCATGTCTCCAAAAGACATAGCTTCTCAGCTGCCCCACAAGA ACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGC TCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGC GCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACC 559 TAAGATTCAACAAGATTTTCAACAATGGAATGTCTTCTCATTCTACCATTACCATGAAGA CCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCT Gaps 1; Length 917; Indels Score 479.8; DB 9; Pred. No. 1.1e-126; 0; Mismatches 252; tch 15.6%; al Similarity 71.7%; 642; Conservative C 139 1880 1640 1700 1760 1820 2060 2120 19 1940 2000 379 439 499 Query Match Best Local Matches 64 셤 셤 ઠે g 셤 ò a 8 셤 g ò 셤 ठ ઠે 요 ò g ò ે Š

2240 AGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGAGACCGTGGTCGATGTCGGAGGCG

Eukaryotatic trichocarpa Erreptophyta; Embryophyta; Tracheophyta; Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; eurosids 1; Malpighiales; Salicaceae; Salicaceae; Populus.

Exalph, S., Cooper, D., Kolosova, N., Oddy, C., Butterfield, Y., Kalpstrick, R., Liu, J., Palmquist, D., Stott, J., Barber, S., Yang, G., Kirkpatrick, R., Liu, J., Palmquist, D., Stott, J., Barber, S., Masson, A., Mayo, M., Moran, J., Olson, T., Wong, D., Ritland, C.E., Siddiqui, A., Holt, R., Jones, S., Marra, M., Ellis, B.E., Douglas, C., Ritland, K. and The poplar transcriptome: Analysis of expressed sequence tags from multiple cDNA libraries

L Unpublished (2004). 911 bp mRNA linear EST 29-AUG-2005 WS01126.BR 015 PT-P-FL-A-2 Populus trichocarpa cDNA clone DT497587.1 GI:73894849 EST. 2418 2478 798 619 AAATTCTTGAAAATTACAAAGGGTTTGAAGGCCTCAACTCAGTTGTCGACGTTGGTGGTG 678 739 ircarraccacarerrarracagarecrecaecrrirecregiereaecarerreses 2300 GCACTGGGGGCGTGCTCAGCATGATGCCAAATACCCATCAATGAAAGGGATCAACT 679 GAATTGGAGCCACACTTAACATGATTATCTCCAAGTATCCATCGATTAAAGGCATTAACT 2360 TCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAG 2419 GCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATG 799 GAGACATGTTTGTTAGTGTTCCAAAGGGAGATGCCATTTTTATCAAGTGGATATGTCATG Rm. 237, 2479 ACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCC 2533 859 ATTGGAGTGATGAGCACTGCGTGAAATTCTTGAAGAACTGCTATGAAGCACTCCC 913 Populus trichocarpa (Populus balsamifera subsp. trichocarpa) Contact: Joerg Bohlmann
Genome BC forest genomics program
University of British Columbia
Michael Smith Laboratories, 6174 University Boulevard,
Vancouver, British Columbia, Canada, V6T 123 /mol_type="mRNA" collivar="380-2499 (Niequally-1)" /db xref="taxon:3694" /clone="WS01126_015" .911
 /organism="Populus trichocarpa" Email: bohlmann@msl.ubc.ca Plate: WS01126 row: O column: High quality sequence stop: 943. Location/Qualifiers Fax: 1-604-822-2114 source DEFINITION ORGANISM RESULT 15 DT497587 ACCESSION AUTHORS REFERENCE JOURNAL VERSION KEYWORDS SOURCE FEATURES TITLE ò 셤 ò 셤 à a ò 셤

propagation."

```
GATGTCGGAGGCGCCACGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG 2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGGGATCAACTICGA-CGGCCCAAGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2227 ATTACTATGAAGAATACTGGAAACATACAAGGGCTTCGAGGGCTCGAGAGCGTGGTC 2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1987 TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGAGGACCGCCATCGCC 2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2047 GCACTCAACTIGARGAACAGGACAAAARCCTCATGGAAAGCTGGTATTACCTGAAAGAT 2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC 2226
                                                                                                                                                                                                                                                      creaceaggic crecite contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CICCCGACCCAGAACCCCGAGGCACCCGICAIGCICGACCGGAICTICCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1927 AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCCCGATGGCAAGGTCGAGCGGCTC 1986
                                                                                                  Ä
                                                                                                                                                                                                                                                                                                                                                                    GAGATCATGGCCAAGGACGGGCCGGGCGGTTCCTCCACGGGGAAATCGCGGCACAG 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         819 GAGCATGTTGGTGGGGACATGTTTGTTAGTGCCCCAAAGCAGATGCCGTTTTCATGAAG 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     459 CCTCTCTGTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGAT 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chadecagractricatricatratearetrehaaacagecarraaactreaecreaecretri 218
                                                                                                                                                                                                                                                                                                                                                                                             GAAACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGCACACCTCTTTGCCATGCAA 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                  Gaps
                                                                                                  1;
                                            Length 911;
                                       Query Match
15.4%; Score 473; DB 10; Length 911
Best Local Similarity 74.7%; Pred. No. 1e-124;
Matches 607; Conservative 0; Mismatches 205; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGATATGCCATGACTGGAGTGACGACCATTGC 2498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            879 TGGATATGCCATGATTGGAGCGACGCACACTGC 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2167
                                                                                                                                                                                                                                                                                                                       159
                                                                                                                                                                                                                                                                  1747
                                                                                                                                                                                                                                                                                                                                                                            1807
                                                                                                                                                                                                                                                                                                                                                                                                                               219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1867
                                                                                                                                                                                                            66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
ORIGIN
                                                                                                                                                                                                                                                               $ 6 5 6 5
$ 6 5 6 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                    요
```

Search completed: November 1, 2006, 07:01:15 Job time : 9982.88 secs

```
; Search time 570.583 Seconds (without alignments) 10067.438 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 113, App
Sequence 60, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appli
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 12, 1
Sequence 5, Al
Sequence 1, Al
Sequence 1, Al
                                                                                                                                                        1 agcaccatcagcaaaaaata........acttcgaacaaaaaaaaa 3070
                                                                                                                                                                                                                                                                                                                                                                           1: /EMC_Celerra_SIDS3/ptodata/2/ina/1_COMB.seq:*
2: /EMC_Celerra_SIDS3/ptodata/2/ina/5_COMB.seq:*
3: /EMC_Celerra_SIDS3/ptodata/2/ina/6_COMB.seq:*
3: /EMC_Celerra_SIDS3/ptodata/2/ina/6_COMB.seq:*
4: /EMC_Celerra_SIDS3/ptodata/2/ina/T_COMB.seq:*
6: /EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
7: /EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
8: /EMC_Celerra_SIDS3/ptodata/2/ina/PP_COMB.seq:*
9: /EMC_Celerra_SIDS3/ptodata/2/ina/PP_COMB.seq:*
9: /EMC_Celerra_SIDS3/ptodata/2/ina/RE_COMB.seq:*
10: /EMC_Celerra_SIDS3/ptodata/2/ina/RE_COMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3, Sequence 3, Sequence 17, Sequence 17, Sequence 17, Sequence 1, Sequence 4, Sequence 3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1
Sequence 1
Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1
Sequence 2
Sequence 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
Sequence
Sequence
GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-598-401C-113

US-09-598-401C-60

US-09-169-799-107

US-09-276-599-12

US-09-598-401C-12

US-09-598-401C-12

US-09-598-401C-12

US-09-508-11

US-09-50-589-1

US-09-50-589-1

US-09-50-569-17

US-09-50-569-17

US-09-50-569-17

US-09-50-569-17

US-09-50-569-17

US-09-50-569-17

US-09-50-569-17

US-09-50-569-17

US-08-204-288-4

US-09-50-569-5

US-09-50-569-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-500-569-13
US-09-971-823B-13
US-08-975-316-24
US-09-615-192A-24
                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                       1403666 seqs, 935554401 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                   OM nucleic - nucleic search, using sw model
                                                                           October 31, 2006, 23:41:44
                                                                                                                                                                                             Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                   Issued Patents NA:*
                                                                                                                           US-10-702-319A-113
3070
                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3070
2096
1630
1630
661
661
1503
1368
1370
1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1314
                                                                                                                                                                                  IDENTITY NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20.1
19.7
19.7
19.2
118.1
118.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16.6
115.2
115.2
112.9
112.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                               Scoring table:
                                                                                                                                                        Sequence:
                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                   Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
No.
                                                                             ü
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
                                                                           Run
```

JS-09-169-789-24	2A-106	90.								Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Seguence	Sequence	Sequence	Sequence
US-09-16	US-09-615-192A-106	US-09-169-789-106	US-09-235-153-5	US-08-186-833-3	US-09-500-569-11	US-09-971-823B-11	US-09-500-569-1	. US-09-971-823B-1	US-08-204-288-6	US-09-500-569-19	US-09-971-823B-19	US-08-975-316-51	US-09-615-192A-51	US-09-169-789-51	US-09-615-192A-127	US-09-169-789-127	US-09-500-569-15	US-09-971-823B-15	US-09-615-192A-191	US-09-500-569-9	US-09-971-823B-9
ო (m i	٣	n	~	٣	m	٣	'n	~	٣	m	N	m	٣	m	٣	e	m	r	٣	e
421	407	407	1494	1525	1195	1195	1008	1008	1471	926	926	744	744	744	661	661	1458	1458	1036	1342	1342
12.7	12.7	12.7	11.5	11.5	11.2	11.2	10.4	10.4	9.8	9.6	9.8	8.4	8.4	8.4	8.3	8.3	8.1	8.1	7.5	7.5	7.5
391.4	391	391	353.8	353.8	343.4	343.4	319.2	319.2	300.8	300.2	300.2	259.4	259.4	259.4	254	254	250	250	230.2	229.2	229.2
2.0	25	56	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

RESULT 1 US-09-598-401C-113 Sequence 113, Applic Patent No. 6596925 GENERAL INFORMATION: APPLICANT: Perera, APPLICANT: REGE, S TITLE OF INVENTION: TITLE OF INVENTION: FILE REFERENCE: 110 CUNRENT APPLICATION IN FILE REFERENCE: 110 CURRENT FILING DATE: PRIOR PILING DATE: PRIOR PLILING DATE: PRIOR PAPLICATION N PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLLING DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PLUIC DATE: PRIOR PL	ULT 1 19-598-401C-113 equence 113, Application US/09598401C equence 113, Application US/09598401C ENERAL INFORMATION: APPLICAMT: Eagleton, Clare APPLICAMT: Eagleton, Clare APPLICAMT: Engleton, Clare APPLICAMT: Rice, Stephen J. TITLE OF INVENTION: Modification of Gene Expression FILE REFERENCE: 11000.1036c2 CURRENT APPLICATION NUMBER: US/09/598,401C CURRENT APPLICATION NUMBER: US. No. 6596925 60/146,591 PRIOR FILING DATE: 2000-06-20 PRIOR FILING DATE: 1999-07-30 PRIOR FILING DATE: 1999-03-25 NUMBER OF SEQ ID NOS: 120 SOFTWARE: FaetSEQ for Windows Version 4.0 LENGTH: 3070 TYPE: DNA OP-598-401C-113
Query Match Best Local Matches 307	Query Match Best Local Similarity 100.0%; Pred. No. 0; Matches 3070; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Oy 1	1 AGCACCATCAGCAAAAAATAGATGGGATAGAGTGGGGACACCACCTGTTCAGTTTGATTCC 60
Oy 61	CTTGAGATGACCTACAGTGATAGCTTGATGATAAGATGGGATAATAGATTCACCAGAGG 120
Db 61	
Oy 121	GATAAAAAGGTAGGGGATTCTCCCCGTCTGATGCCTCGGGTAGGTTGAAATA 180
Db 121	
Oy 181	1 AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATTGCATGAT 240
Db 181	

1321 CTCCCTAMAGET CALCACATACATACCCTCATTANTTICSTGGGAAACCCAACCCCAATATACCCCTCATTANTTICSTGGGAAACCCAACCCCAATATACCCCTCATTANTTICSTGGGAAACCCAACCCCAACCCCAACCCCCAACCCCCCAACCCCC
6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
211 CONTIGNACCATIONACCINANTCCINANTCCINANTACCINANANTCCIN 300 211 TICCACCATIONACCINANTCCINANTCCINANANTCCIN 300 211 TICCACCATIONACCIN CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT CONTINUANT C

2441 TRAMETGATIVECONTACTICAGAGGCCANCONTECCONAGAGGCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	фd		0S-60-5	US-09-598-401C-60
CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE CANCELLE	ò	TGAAGTGGATATGCCATGACTGGAGGACGACGTTGCGCGGAAGTTCCTCAAGAACTGCT	Query Best I	Simi
	qa	TGAAGTGGATATGCCATGACTGGACGACGATTGCGCGAAGTTCCTCAAGAACTGCT	ria con	es zoti; comservac
CANAGATGCGTACTCCTGTTACC 2580	ð	ACGATGCGCTTCCCAACAATGGAAAGGTCATTGCAGAGTGCGTACTCCCTGTGTACC	ස් ස්	CTGAGCCAT
CANCEACTCATCATCATCACCACA 2640	qa	ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC	8	
CANCECANTAGE 2640 CAGAGACATTGGCCAAAGGGCCCGAT 2700 CAGAGACATTGGCCAAAGGGCCCGAT 2700 CACTCACCTCACCTCAAAGAGGCCCCGAT 2700 CACTCACCTCATGGCCAAAGAGGCCCCGAT 2700 CACTCACCTCACCTCAAAGAGGACCCCGAT 2760 CACTCACCTCACCTCAAAGAGGACCCGAT 2760 CACTCACCTCACCTCAAAGAGGACAAAAA 2800 CACTCACCTCACTCAAAAGGAAAAAAA 2840 CACTCACTCACTCATAAAAGGAAAAAAA 2840 CACTCACTCATAAAAGGAAACAAAA 2840 CACTCATCACTCATAAAAGGAAACAAAA 2840 CACTCATCACTCATAAAACGAAACAAAA 2840 CACTCATCACTCATAAAACAAAAAAAAAAAAAAAAAA	ò	CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGGATCATGTTGGCCCACA	; A	
CACCOCATAGGGCCCGAN CACCACCAAAGGGCCCGAN CACCACCACCAAAGGGCCCGAN CACCACCACCACCAAGGGCCCGAN CACCACCACCACCAAGGGCCCGAN CACCACCACCACCAAGGGCCCGAN CACCACCACCACCACAGGGCCCCGAN CACCACCACCACCACAGA CACCACCACCACCACACA CACCACCACCACCACACA CACCAC	qa	CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA	}	
Cadded-Airted-Ceanaded 2760 Cadded-Airted-Ceanaded 2760 Caccacacacacacacacacacacacacacacacacaca	ò	ACCCAGGCGCGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGAT	2 A	
CTCTCACGTCATGGAGTTCCTGAAGA	qa	Acccadecedanadadadacacadanadadatregadecatregecanadegecegar	ځ	
### Control	ò	TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCATGGAGTTCCTGAAGA	Š	
### STATEST CONTINUENCY 1979 1239 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319 1319	qa	TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGAAGA	3 8	
### ACT CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED TO CONTRIVED	ò	CCGCTTGATCTGCTCCTCTGTGGTGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG	÷ 6	
### ACT CTTCCTCATAAAAGGAAACAATA 2880 ### ACT CTTCCTCATAAAAGGAAACAATA 2880 ### ACT CTTCCTCATAAAAGGAAACAATA 2880 ### ACT CTTCTCATAAAAGGAAACAATA 2840 ### ACT CTTCTCATAAAAGGAAACAATA 2940 ### ACT CTTCTCATAAAAACGAAACAATA 2940 ### ACT CTTCTAACGAAACGCGTATATGGAT 3000 ### ACT CTTCTAACGAAACGCGTATATGGAT 3000 ### ACT CTTCTACAGAAAACGCGTATATGGAT 3000 ### ACT CTTCTACAGAAAACGCGTATATGGAT 3000 ### ACT CTTCTACAGAAAACACTTCGAACA 3000 ### ACT CTTCTACAGAAAATCACTTCGAACA 3000 ### ACT CTTCTACAGAAAAAAAAAAAAAAAAAAAAAAAAAA	qa	CCGCTTGATCTCCTCTCTCTGTGTTCTTCATCGTTTTTGAAAGGTCGTGAAG	3 8	
### CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGART A CANAGART A CANAGART A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGARA A CANAGAR	ò	GAGCCCTTTCTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA	Š	
CANGATTTGTTGTTTTATGTCTATAA 2940 CANGATTTGTTTTATGTCTATAA 2940 CANGATTTGTTTTATGTTTTATGTTTTATGTTTTATGTTTTATGTTTTATGTTTTTT	qa	GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA	3 8	
CTTTTTCAGTAAATCACTATAAA 2940	λõ	AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA	j 15	
	qa	AGAAGCGACTGTATGATGGTGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA	DP	401 AACCCACAAAG
CTTTTTTCAGTAAATCGCGTATATCGAT 3000	. &	AGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT	ò	1435 AGAGTTTTCTCT
FUTTITICAGTAAATCACTTCGAACA 3060	qq	AGTITIGAGICITCIGCATACTGATITCACAGAATGTGTAACGAAACGGCGTATATGGAT	DÞ	461 AGAGTTTTCTCT
	ò	GTGCCTGAATGATGGAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTTCGAACA	λõ	
64 Cor the 641 ression 67 1675 104 1675 1675 105 1735 1735 146,591 67 1735 1276,539 69 1915 1915 69 1915 1001 60 1915 1001 1001	; A	GTGCCTGAATGATGGAATTGTGATATTCTGTTTTTTTTCAGTAAATCACTTGAACA	qa	
bb 581 Cy 1615 Db 641 Cy 1675 Db 701 Cy 1735 Cy 1735 Cy 1735 Cy 1735 Cy 1735 Cy 1735 Cy 1855 Cy 1915 Cy 1915 Cy 1915 Cy 1915 Db 941 Cy 1915 Db 1915 Db 1915	1 8	CEC	λõ	1555 TATCGAACCTCC
for the ression Qy 1675 for the ression Qy 1735 746,591 Qy 1795 7276,599 Qy 1915 Db 941 Qy 1975 Db 1975 Db 1001	Š, å	AAAAAAAAA 	qq	
Exertheression (27 1675 (28 1675 (29 1735 (29 1735 (27 1735 (27 1735 (27 1735 (27 1915 (27 1915 (27 1915 (27 1915 (27 1915 (27 1915 (27 1915	o o	нанананан	ŏ	1615 CTGCTTTCCTTT
for the cession	RESULT	2	qq	641 CIGCITICCTIT
For the cression	onbes :	98-401C-60 nce 60, Application US/09598401C	λ	1675 TCGACCGGCTCC
for the pb 761 ression QY 1735 746,591 QY 1795 Db 821 7276,599 Db 881 CY 1915 Db 941 CY 1915 Db 941	; Facer.	C. NO. 6596925 AL INFORMATION:	Ωp	701 TCGACCGGATCC
for the Db 761 ression Qy 1795 /146,591 /276,599 Db 881 Qy 1915 Db 941 Qy 1975	; APPL ; APPL	ICANT: Perera, J. Ranjan ICANT: Bagleton, Clare	ò	1735 TTCGCCATGCAG
746,591 Oy 1795 746,599 Db 821 7276,599 Oy 1915 Db 941 Db 941 Db 941 Db 1001	, APPL , TITL	for	QQ	
746,591 Db 821 Qy 1855 Db 881 (276,599	TITE	rea	è	
/146,591 Qy 1855 /276,599 Qy 1915 Db 941 Oy 1975 Db 1975	CURR	ENT APPLICATION NUMBER: US/09/598,401C	3 A	
7276,599 Db 881 Qy 1915 Db 941 Qy 1975 Db 1001	PRIO	/146,	è	
/276,599 0y 1915 Db 941 Oy 1975 Db 1001	, PRIO	A PPLICATION NUMBER: PCT/NZ00/00018	ें र	
Oy 1915 Db 941 Oy 1975 Db 1001	; PRIC	/276	Dp	
Db 941 Qy 1975 Db 1001	, PRIC	R FILING DATE: 1999-03-25 ER OF SEQ ID NOS: 120	λ ₀	
LENGTH: 2096 TYPE: DNA ORGANISM: Bucalyptus grandis Db 1001	; SOFT	WARE: FastSEQ for Windows Version 4.0 D NO 60	ΟD	
ORGANISM: Bucalyptus grandis 1001		GTH: 2096 E: DNA	ζ	
			qq	

```
1078
                                                                                                            1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAG 1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTACGGCTTAGCGCCGGTGCAAGTTCTTGGTCAAGAACGAGGACGGG 2034
                                                                       1138
                                                                                                                                               1258
                                                                                                                                                                                                                         1378
                                                                                                                                                                                                                                                                                                1494
                                                                                                                                                                                                                                                                                                                                                                                                           1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTCCCGACCCAGACCCCGAGGCACCCGTCATGCTCGACCGGATCTTC 1914
                                                                                                                                                                                   ATCGGCCAGTAAGGGTAATATTAACAAATAGCTCTTGTACCGGG 1318
                                                                                                                                                                                                                                                           GGTCAGATGTCATCCCAC---GAGAGAGAGAGAGAGAGAGAGAGAGG 1434
                                                                                                                                                                                                                                                                                                                                    1554
                                                                                                                                                                                                                                                                                                                                                                         1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1734
                  7
                                                     100
                                                                                         160
                                                                                                                             220
                                                                                                                                                                  280
                                                                                                                                                                                                     340
                                                                                                                                                                                                                                          400
                                                                                                                                                                                                                                                                                                                 520
                                                                                                                                                                                                                                                                                                                                                      580
                                                                                                                                                                                                                                                                                                                                                                                          640
                                                                                                                                                                                                                                                                                                                                                                                                                              700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAG 1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAGATCATGGCCAAGGACGGCCCGGCGCGTTCCTCCACGGGGAA 1854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           880
                                                                                                          CCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                       AATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                TAGGGTCCAATATTTGCGGGAGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                             CGAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGGAGGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAGATCATGCCCAAGGCCGGGCCGGGCGGTTCCTCTCCCCGGGGGAA
                                                                        TTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTC
                   Gaps
                   4,
DB 3; Length 2096;
                  11; Indels
Score 2020.4; Pred. No. 0; Mismatches
65.8%;
99.3%;
tive 0
```

```
TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG 2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGAGTTCAACAAGATCTTTA 2200
                                                                                                                                                                                                                                                                                                                                                                                                                            1661 AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG 1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              accegegaatgtctgatcactccaccattactatgaagaagatactggaaacatacaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1841 TCTCCACGGGGGAAATCGCGGGCACAGCTCCCGAGAACCCCGAGGCACCCGTCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1901 TCGACCCCGATCTTCCGGCTGCTGGCTACTCCGTGCTCACGTGCACCTCCGCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1961 TCCCCGATGGCAAGGTCGAGCGCCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAACGAGGACGCGCTCCCATCGCCGCACTTCATGAACCAGGACAAAATCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGAGGCGAACCTCTTCGCCATGCAGCTGCTGCCTCCCCTTCCCCATGGTCCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1630;
          is Sequence 107, Application US/09615192A
is Sequence 107, Application US/09615192A
is Retent No. 6410718
is GENERAL INFORMATION:
APPLICANT: Bloksberg, Leonard N.
APPLICANT: HavokRala, Ilkka
ITLE OF INVENTION: Modification of Plant Lignin Content
ITLE OF INVENTION: Modification of Plant Lignin Content
FILE REFERENCE: 11000.1003c4U
CURRENT APPLICATION NUMBER: US 08/975,316
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 1997-11-21
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR PLICATION NUMBER: US 08/13,000
PRIOR PLICATION NUMBER: US 09/169,789
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
                                                                                                                                                                                                                                                                                                                         Score 1429.6; DB 3; Length
Pred. No. 0;
0; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 99.0%;
Matches 1449; Conservative
                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                      US-09-615-192A-107
                                                                                                                                                                                                                                                                  LENGTH: 1630
                                                                                                                                                                                                                                                    SEQ ID NO 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1901 ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTATGT 1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAAATGTGTAACGAAACGGCGTAT 2994
                                                                                                                                                                                                                                                                                                                                                                                                                2574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA 2874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2875 ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGT 2934
                                                                                                                                                                                                                                                                                                                                    1480
                                                                                                                                                                                                                                                                                                                                                            2514
                                                                                                                                                                                                                                                                                                                                                                          2454
                                                                           1180
                                                                                                  2214
                                                                                                                            1240
                                                                                                                                                      2274
                                                                                                                                                                              1300
                                                                                                                                                                                                        2334
                                                                                                                                                                                                                    2394
                                                  2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCACAACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGGATTICAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGACCGCTTGATCTCCTCTGTGGTGATGTTCATGGTTTTGAAAGGTC
                                                                                                                                                                                                                                                                                                                                                            TTTTCATGAAGTGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                              ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                GATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTC
                                                                                                                                                                    GAGACCGTGGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAA
                                                                                                                                                                                                                                                        TACCCATCAATGAAAGGGATCAACTTCGACGCCCCAACGGATTGAAGACGCCCACCCC
                                                                                                                                                                                                                                                                                                          TTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCA
                                                                                                                                                                                                                                                                                                                          TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCCATTCAACAAGGCGTACGGGATGACC
                                                               GTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAACAAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2815
                                                                                                                                                                                                                                                                                                                                                                   2455
                                                                                                                                                                                                                                                                                                                                                                                                                    2515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2635
                                                                                                                                                                                                                                                                                                                                        1421
                                                       2095
                                                                                                         2155
                                                                                                                                 1181
                                                                                                                                                           2215
                                                                                                                                                                                  1241
                                                                                                                                                                                                             2275
                                                                                                                                                                                                                                     1301
                                                                                                                                                                                                                                                               2335
                                                                                                                                                                                                                                                                                       1361
                                                                                                                                                                                                                                                                                                                 2395
                               1901
      2035
```

원

a y

8 8 8

B & B & B & B

8 g

유 ð 8 6

ઠે

중 음 g ò 2260

900

a ð

원 8

⋧

음 상 음

8 8

1960

360

1840

240

1780

9

Gaps

1;

1900

300

2020

420

2080

480

٦;

8 6 8 6

음상음

ઠે

B & B &

ઠે 8 S

g

6 B 6

8 & g

8 8

셤

```
1660
                                                                                                                                                                                                                                                                                                       1720
                                                                                                                                                                                                                                                                                                                                                                         1780
                                                                                                                                                                                                                                                                                                                                                                                                                                          1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2499
                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                        841 CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACCATTGCG
                                                                                                                                                                                                                                    1661 AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG
                                                                                                                                                                                                                                                                                                                                                                         ACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAA
                                                                                                                                                                                                                                                                                                                                                                                         AGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTCCACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCCGAGGCACCCGTCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTCCCCGGGGGAAGTCGCGGCCCAGCTCCCGACCCCAGAACCCCGAGGCACCCCGTCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGACCGGATCTTCCGGCTGCTGCCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGACCGGATCTTCCGGCTGCTGCTGCTACTCCGTGCTCACGTGCTCACGTGCACCCTCGCGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               recedarescalegicalecereratescritiaescritiaescriticalecia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGGAATCCCATTCAACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCGGGGAATGTCTCCACCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2261 GCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGGCCCTGCTCGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGATCGTTGCCAAATACCCATCGATGAAAGGGATCAACTTCGACCTGCCTCACGTGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2380 AAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG
                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                   1,
                                                                                                                                                                      Length
                                                                                                                                                                                                   Indels
                                                                                                                                                                      .,
.,
                                                                                                                                                                                                   14;
                                                                                                                                                                      <u>DB</u>
                                                                                                                                                                  Score 1429.6;
Pred. No. 0;
0; Mismatches
EARLIER APPLICATION NUMBER: US 08/713,000
EARLIER FILING DATE: 1996-09-11
NUMBER OF SEQ ID NOS: 185
SSCTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 107
LENGTH: 1630
                                                                                                                                                                  Query Match
Best Local Similarity 99.0%;
Matches 1449; Conservative
                                                                                                            ; ORGANISM: Eucalyptus grandis
US-09-169-789-107
                                                                                                                                                                                                                                                                                                                                                                         1721
                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                          1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2440
                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                   TYPE: DNA
                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                      2439
                                                                                                                                                                                                                                                                                                         2559
                                                                                                                                                                                                                                                                                                                                                                         2619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITGITGITITATGICTATAAAGITITIGAGICTICIGCATACIGAITICACAGAAIGIGI 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACGAAACGGCGTATATGGATGTGCCTGAATGATGAGAAATTGTGATATTCTGTCTTCTTT 3039
                                                                                                     2379
                                                                                                                                                                                                                                      2499
                                                                                                                                                                                                                                                                                                                                                                                             AGTGCGTACTCCCTGTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACCATCG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTGCATCATGTTGGCCCACAACCCAGGGGAAAGAGAGACACACAGAAGAAGTTCGAGG 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCGAAGTGGAAGTTACAAGA 1320
                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                          CGAAGTICCICAAGAACTGCTACGAIGCGCTICCCAACAATGGAAAGGTGAITGTAGTGGAG 960
   ACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                    GCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGGGGGCACTGGGGCCGTGCTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                              GCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCA
                                                                                                                                   721 TGATCGTTGCCAAATACCCATCGATGAAAGGGATCAACTTCGACCTGCCTCACGTGATTG
                                                                                                                                                                                                       AAGACGCTCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                      CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG
                                                                                                                                                                                                                                                                      CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGAGTGACGACCATTGCG
                                                                                                                                                                                                                                                                                                       CGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAG
                                                                                                                                                                                                                                                                                                                                                                           AGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 redarridaaaagregreaaggageeerrrrrereacagriggerreggearaceaagrie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTGTTGTTTTTATGTCTATAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGT
                                                                                                   TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 107, Application US/09169789
Sequence 107, Application US/09169789
Sequence No. 6653528
GENERAL INFORMATION:
APPLICANT: Blokeberg, Leonard N.
APPLICANT: Blokeberg, Leonard N.
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content;
FILE REFERENCE: 11000.1003c2
CURRENT APPLICATION NUMBER: US/09/169,789
CURRENT PILING DATE: 1999-110-09
SEALLER APPLICATION NUMBER: US 08/975,316
SEALLER PILING DATE: 1997-11-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCAGTAAATCACTTCGAACAAAA 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAGTAAATCACTTCGAACAAAA 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-169-789-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2740
                                                                                                   2321
                                                                                                                                                                      2380
                                                                                                                                                                                                   781
                                                                                                                                                                                                                                      2440
                                                                                                                                                                                                                                                                                                         2500
                                                                                                                                                                                                                                                                                                                                                                         2560
                                                                                                                                                                                                                                                                                                                                                                                                                                            2620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1441
                                                                    661
                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                           961
   601
```

CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT

1019

```
ACATATTGGTGGTGCTGCAATATTTTGCGGGAGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 CGAATTTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAGGCTCATTA
                                                                                                                                                                AAGGCCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                 1079 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
VESOUR 6

VESOUR 6

VESOUR 6

VESOUR 6

VESOUR 6

VESUE 7

VERT 7

VERT 6

VERT 7

VERT 6

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VERT 7

VER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1615
                                                                                                                                                                                                                                                                                                                                                              1379
                                                                                                                                                                                                                                                                                                                                                                                                                          1435
                                                                                                                                                                                                                                                                    241
                                                                                                                1139
                                                                                                                                                                            1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                        8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                              8 8 8
                                                                                                                                                                B & B &
                                                                          g
                                                                                                               장염
                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                                                                              1380
                                                                                                                                                                                                                                                                                                                   2679
                                                                                                                                                                                                 2739
                                                                                                                                                                                                                            1140
                                                                                                                                                                                                                                                                         1381 AACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATATTCTGTCTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                            TITGITGITITIALGICTATAAAGITTTTGAGICTTCTGCATACTGATTTCACAGAAIGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                  2740 ACGICAIGGAGIICCIGAAGACCGCIIGAICTGCICCICTGIGGIGAIGIICAIGGIICI
              cgaagtrecreaagaacrecracgargegerreccaacaarggaaaggreargregag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 12, Application US/09276599; Patent No. 6380459; Patent No. 6380459; Patent No. 6380459; Patent No. 6380459; Patent No. 6380469; Patent No. 6380469; Patent No. 6380469; Patent No. 6380469; TITLE OF INVENTION: Composition and methods for the TITLE OF INVENTION: Composition of gene expression; TITLE OF INVENTION: modification of gene expression; FILE REFERENCE: 11000.1036; CURRENT APPLICATION NUMBER: US/09/276,599; CURRENT FILING DATE: 1999-03-25; NUMBER OF SEQ ID NOS: 21
SOCTWARE: FastSEQ for Windows Version 3.0; SEQ ID NO 15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
20.8%; Score 638.2; DB 3;
Best Local Similarity 98.9%; Pred. No. 4.5e-162;
Matches 654; Conservative 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCAGTAAATCACTTCGAACAAA 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:

NAME/KEY: 5.UTR

LOCATION: (1)...(654)

NAME/KEY: TATA signal

LOCATION: (537)...(543)

NAME/KEY: CAAT signal

LOCATION: (499)...(502)

US-09-276-599-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
US-09-276-599-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2980
                                                                                                               961
                                                   106
                                                                                  2560
                                                                                                                                                                                                                                                                                                                                                                                          g
S
                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                       8 8 8
                                                                                  8 B 8
                                                                                                                                                                8 & 8
                                             임
```

1494

1434

420

1258

1198

120

1318

1554

540

139

1866

1926

1986

2046

439

379

2106

499

2166

559

2226

2286

619

```
2466 TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2586 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGTTGGCCCACACAACCCA 2645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          680 gargringergendendendendendentranden (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 gargringen (239 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         860 regarareccarearregaeceacecececrecrraaaarrerreaagaarrecrareae 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGATCATGGCCAAGGACGGGCCGGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               200 gaaarcardecraaadcredeccredrecrirerrerecacarcreagaragerrereac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      260 CTCCCTACCAAAAACCCTGATGCGCCTGTCATGTTAGACCGTATCCTGCGCCTCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCCGATGGCAAGGTCGAGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  320 Adcincircanicinaccidencircicaaadaneineendandeaadeendadadadeend
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1987 TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1047 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2107 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2167 CATGGCACCGGACTCCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      560 CATGGCACGGATCCAAGATTCAACAAGGTCTTCAACAAGGGAATGTCTGACCACTCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2347 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          740 AAGGCATTAACTTCGATCTGCCCACGTCATTGAGGATGCCCCATCTTATCCCGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             800 GAGCATGTTGGTGCGACATGTTTGTTAGTGTGCCCAAAGCAGATGCCGTTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2526 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               920 GCGTTGCCGGAAAACGCCAAGGTCATACTTGTTGAGTGCATTCTTCCCGTGGCTCCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAACTCAGATGACTCCAGGTATCAGATGAAGAGGCACACCTCTTTGCCATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                140 crasccastrocratoratoraticarcoranda a crasccarrola crasccasoratica de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir de construir 
                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                           Length 1503;
                                                                                                                            ; NAME/KEY: misc feature
; OTHER INFORMATION: AldOMT; GenBank accession number:
US-09-947-027-5
                                                                                                                                                                                                                                                        20.6%; Score 631; DB 3; L<sub>1</sub> 74.5%; Pred. No. 5.9e-160; ive 0; Mismatches 275;
                               TYPE: DNA
ORGANISM: aspen populus tremuloides
FEATURE:
                                                                                                                                                                                                                                                           Query Match 20.6
Best Local Similarity 74.5
Matches 807; Conservative
LENGTH: 1503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USSOLIA (NO. 6852864)

Sequence 5, Application US/09947027

Sequence 5, Application US/09947027

Sequence 5, Application US/09947027

Sequence 5, Application US/09947027

Patent NO. 685864

GENERAL INFORMATION: METHODS FOR SIMULTANEOUS CONTROL OF LIGNIN CONTENT AND COMPOSITIC TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS

FILE REFERENCE: 066040-9718

FILE REFERENCE: 066040-9718

FURNEAT APPLICATION NUMBER: 06/230,086

PRIOR APPLICATION NUMBER: 60/230,086

PRIOR FILING DATE: 2000-09-05

NUMBER: OF SEQ ID NOS: 14

SOFTWARE: Patentin version 3.0

SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                   1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            909
                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                     GTATGATCTTGGGGGTTGTTGGTGCAAATTTGCAGGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTCCGTATTTCTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                   CGAATTITCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAATTTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTCCGTATTTCTCTCACATTAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGITITCICTCTATATICTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAGGTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATATTGGTGTGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATATTGGTGTGTGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATCGAACCTCCACCACCATACCTCCACTTCCAATCCCCACCATTTATCCGTTTTATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                  4
                                                                                                       Length
                                                                                                                                                                  Indels
                                                                                                Score 638.2; DB 3;
Pred. No. 4.5e-162;
0; Mismatches 3;
                                                                                                Query Match 20.8%;
Best Local Similarity 98.9%;
Matches 654; Conservative
   ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T 661
                 US-09-598-401C-12
                                                                                                                                                                                                                                                                                                                                                                   1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1675
                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            장 염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
```

2465

859

2585

2405

8

```
2586 ACGAGCCTAGCGAACGAAGGATCCACATCGACTGCATCATGTTGGCCCACAACCCA 2645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2706 GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT 2765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rggarargccargacrgagargaccarrgcGcGaaGrrccrcaagaacrgcracgar 2525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2526 GOGCTTOCCAACAATGGAAAGGTGATCGTTGCAAGGTGCGTACTCCCTGTGTACCCCAGAC 2585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       980 ACAAGCCTTGCCACCAAGGGAGTCGTGCACGTTGATGTCATCATGCTGGCGGCACAAGCCC 1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2287 GATGTCGGAGGCGGCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG 2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                860 TGGATATGCCATGATTGGAGCGAGCGCCCACTGCTTAAAATTCTTGAAGAATTGCTATGA 919
                                                                                                                                                                                                                                                                                                           1927 AGCIAÇTÇÇGTGÇTÇAÇGTĞÇAÇCÇTCCGCGACGCATGGCAAGGTCGAGCGCÇTC 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2646 geceggaaagagagacacagaagagagricgaggcarrggccaaaggggccggarrrcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2347 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gegerecingaaggegaaneeearreaacaaggegranagaeegangaagaarr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATGGCACCGACCGGGATTCAACAAGATCTTTAACGGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            560 CAIGGCACGGGATCCAAGATTCAACAAGGTCTTCAACAAGGGAATGTCTGACCACTCTAAC
                                                                                                                                                                                                                                                CTCCCGACCCAGAACCCCGAGGGACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                        TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                          2047 GCACTCAACTTGATGAACCAGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           deantertigatagaagaatreeatrraacaaggeeratgggatgaergeattrgaatat
                                                            1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTTTCGCCATGCAG
                                                                                        CTGGCGAGCGCCTCCGTGCTCCCTAAAAGGCCGCCATCGAGATCGACTCCTC
                                                                                                                                                      140 crasiccasiricastricraccaarisariccricaaacasiccarrsaacricsaccricir
                                                                                                                                                                                    GAGATCATGGCCAAGGACGGGCCGCGTTCCTCCACGGGGAAATCGCGGCAAG
                                                                                                                                                                                                              200 GAAATCATGGCTAAAGCTGGCCCTGGTGTTTCTTGTCCACATCTGAGATAGCTTCTCACA
                                                                                                                                                                                                                                                                     ..
H
Length 1503;
                                  Indels
 Score 629.4; DB 2;
Pred. No. 1.6e-159;
0; Mismatches 276;
        Query Match 20.5%;
Best Local Similarity 74.4%;
Matches 806; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          500
                                                                                                                                                                                                                                                                                                                                                                                   1987
                                                                                                                                    1747
                                                                                                                                                                                               1807
                                                                                                                                                                                                                                                            1867
                                                                                                     80
                                                                                                                                                                                                                                                                                           260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                               à
                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                   g
                                                                                                                                      à
                                                                                                                                                             셤
                                                          2646 GGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG 2705
                                                                                                                                              GGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCGAGGTTCCTGAAGACCGCT
                                                                                                                                                                                                                                                                                    US-08-715-325-1
; Sequence 1, Application US/08715325
; Patent No. 5886243
; GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Chiang, Vincent L
APPLICANT: Teai, Chung-Jui
APPLICANT: Teai, Chung-Jui
TILLE OF INVENTION: Genetic Engineering of Wood Color
TITLE OF INVENTION: in Plants
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS: 2
CORRESPONDENCE ADDRESS: 3
ADDRESSEE: Michael, Beet & Friedrich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Populus Tremuloides
DEVELOPMENTAL STAGE: four year old sapling
DEVELOPMENTAL STAGE: undergoing lignification in
DEVELOPMENTAL STAGE: undergoing lignification in
TISSUE TYPE: secondary xylem
IMMEDIATE SOURCE:
LIBRARY: CDNA to total mRNA
CLONE: PLOWIT
US-325-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  €
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 inch, 1.44
COMPUTER: IBM PC compatible
OPERATING SYSTEM: MS DOS 6.22
GOFTWARE: WordPerfect for Windows 5.2
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/715,325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US60/007727
FILING DATE: 30 NOV 1995
ATTORNEY/AGENT INFORMATION:
NAME: Genignani, Joseph A
REGISTRATION NUMBER: 19,482
REFERENCE/DOCKET NUMBER: 66040/9627
TELECOMMUNICATION:
TELECHONE: (414) 277-6560
TELEFAX: (414) 277-6560
                                                                                                                                                                                                                                                                                                                                                                                                                                                        3: Michael, Best & Friedrich
100 E. Wisconsin Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 100 CITY: Milwaukee CITY: Milwaukee STATE: Wisconsin COUNTRY: United States of America ZIP: 53202 ZIP: 53202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: CDNA to mRNA HYPOTHETICAL: no ANTI-SENSE: no ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (414) 277-0656
TELEX: 262057
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 1503 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                             TGA 2768
                                                                                                                                                                                                                            TAA 1162
                                                                                                                                                                1100
                                                                                                                                  2706
                                                                                                                                                                                               2766
                                                                                                                                                                                                                            1160
                                                                                                                                                                                       ð
                                                                                                                                                         g
                                                                                                   g
                                                                                                                                  8
```

2226

2405

859

303

2046

423

2106

483

2166

2226

603

663

543

8 g

```
GAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCCACGGGGGAAATCGCGGGCACAG 1866
                                                                                                                                                                                 AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGGCGGCTC 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2227 ATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCTCGAGACCTCGAGTC 2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2287 GATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGGTTGCCAAATACCCATCAATG 2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1084 derrirrgalderererererererentreacacarerererererereresenda 1143
                                                                                                                                                                                                                          AGCTACTCCATACTGACTTGCTCTCTGAAAGATCATCCTGATGGGAAAGTTGAGAGTCTG 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  844 regarareccarearregaeceacecacacrecravaarrecrigaaaarrecrareac 903
                                                                                                     CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                 CTCCCTACCAAAAACCCTGATGGCCTGTCATGTTAGACCGTATCTTGCGCCTCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                         424 CCTCTCTGTGTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         544 CATGGGATCCAAGATTCAACAAGGTCTTCAATAAGGGAATGTCTGACCACTCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2646 GGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG
                                                           GAAATCATGGCTAAAGCTGGCCCTGGTGCTTTCTTGTCCACATCTGAGATAGCTTCTCAC
                                                                                                                                                                                                                                                                  TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                      364 TATGGCCTTGCTCCTGTTTGCAAATTCTTGACCAAGAACGAGGAGGGTGTCTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                2047 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                 2107 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       484 GCAATTCTTGATGGAGGAATTCCATTTAACAAGGCCTATGGGATGACTGCATTTGAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGGCACCGGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      604 ATTACCATGAGAAGATTCTTGAGACCTACAAAGGCTTTGAAGGCCTCACATCCTTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2347 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     724 AAGGGCATTAACTTTGATTTGCCCCACGTCATTGAGGATGCCCCATCTTATCCCGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     784 GAGCATGTTGGTGGGGACATGTTTGTTAGTGTGCCCAAAGCAGATGCCGTTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2466 TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2526 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  904 GCCTTGCCGGAAAACGGCAAGGTGATACTTGTTGAGTGCATTCTTCCCGTGGCTCCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2586 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2706 GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
US-09-500-569-3
; Sequence 3, Application US/09500569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2766 TGATCTGCTCC 2776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1144 GGCTCAAGTCC
                       1807
                                                               184
                                                                                                     1867
                                                                                                                                           244
                                                                                                                                                                                    1927
                                                                                                                                                                                                                            304
                                                                                                                                                                                                                                                                  1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         664
                                                         g
                                                                                                   ò
                                                                                                                                 셤
                                                                                                                                                                                 ò
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGCACACCTCTTTGCCATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTAGCCAGTGCTTCAGTTCTACCAATGATCCTCAAAACAGCCATTGAACTCGACCTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ή;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1368;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: WASHINGLOW.
STATE: D. C.
COUNTRY: U.S.A.

ZIP: 2006-3518

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/204,288
FILING DATE: 10-MAR-1994
CIASSIFICATION NUMBER: GB 9119279.9
FILING DATE: 10-SEP-1991
PRIOR APPLICATION NUMBER: PCT/GB92/01460
FILING DATE: 09-SEP-1992
ATTORNEY/AGENT INFORMATION:
NAME: KOKULIS, Paul N.
REGISTRATION NUMBER: 16,773
REFERENCE/DOCKET NUMBER: 206860/SE36543/UST
TELEPHONE: (202) 861-3000
TELEPHONE: (202) 861-3000
TELEPHONE: (202) 861-3000
TELEPHONE: CLOSH
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1368 base pairs
TWDE. NUMBER: ACENT
                                                                                                                                                                                                                                                                                                                                                                                                            LIGNIN SYNTHESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 20.1%; Score 618.2; DB 2; Best Local Similarity 73.5%; Pred. No. 1.6e-156; Matches 802; Conservative 0; Mismatches 288;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 L.L.P
                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                              VAN DOORSELAERE, Jan
FRITIG, Bernard J.M.
INZE, Dirk G.
JOUANIN, Lise
KNIGHT, Mary E.
VAN MONTAGU, Marc
                                                                                                                                                                                                                                                                                                                                                                                                            MODIFICATION
PLANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: CUSHMAN DARBY & CUS
1100 New York Avenue,
                                                                                                                                                                                                  ; Sequence 1, Application US/08204288
; Patent No. 5959178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                       LEGRAND, Michel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN D
STREET: 1100 New YOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Washington
                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                             TGA 2768
                                                                                                     TAA 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: 1i
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-204-288-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1747
                       1100
                                                             2766
                                                                                                     1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64
                     요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
```

2405

783

723

2465

843

2525

2585

963

2645

2705

2765

ઠે

2585

```
TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1807 GAGATCATGGCCAAGGACGGGCGCGCTTCCTCTCCACGGGGAAATCGCGGCACAG 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCCGACCCAGAACCCCGAGGCACCCGGTCATGCTCGACCGGGATCTTCCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        334 recriacararccrererrererececaererececaeada againdadadecece 393
                                                                                                                                                                                                                                                                                                                                                                                                                                            814 GAGCATGTAGGTGGAGATATGTTTGCGAGTGTTCCGAAAGCTGATGCTATTTTATGAAG 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154 chadccadrdchrchtchandandanchchanchdchchrdachrdanchdric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GABARTCATAGCCAAGGCTGGCCCTGGTGTTCATCTTTCCCCCACTGACATTTCTTCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCGAGCGCCTCCGTGCTCCTAAAAGGCCGCCATCGAGATCGACTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                       GGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG
                                                                                                                                                                                                                                                                                                                                                                1054 céredesabadadaacadadadaadadrirteadecreredeceaaadegreredaarirecaa
                                                                                                                                                                      1586 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACGATCATCATGTTGGCCCACAAACCCA
                                                                                                                                                                                                                                                                     rcradcrigeccacaaaagretercacarcaargraficargrigecacaraarcca
                                                                                                                                                                                                                                                                                                                                                                                                               GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                                                                2526 gegetreccaacaargeaaaggrearcerrecagagregraciecergrareceagae
                                               TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INCORMATION:
GENERAL INCORMATION:
GENERAL INCORMATION:
APPLICANT: Cahoon, Rebecca E.
TITLE OF INVENTION: Plant Caffeic acid 3-0-Methyltransferase Homologs
FILE REPERENCE: BB137 US NA
CURRENT PILLIAM DATE: 2002-05-17
RIOR APPLICATION NUMBER: 60/119,587
PRIOR FILING DATE: 1999-02-10
NUMBER OF SEQ ID NOS: 28
SOFTWARE: Microsoft Office 97
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1370;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 603.8; DB 3;
Pred. No. 1.3e-152;
0; Mismatches 312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT 2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1174 rakgrictinggcangdarrcangrchadcrgcar 1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
US-09-971-823B-3
Sequence 3, Application US/09971823B
; Patent No. 6610521.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 19.7%;
Best Local Similarity 71.9%;
Matches 802; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 iENGTH: 1370
TYPE: DNA
CRGANISM: Glycine max
US-09-971-823B-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2766
                                                                                                                                                                                                                                                                                                                                     2646
                                                                                                                                                                                                                                                                                                                                                                                                                             2706
                                                                                                                                                                                                934
                                                                                                                                                                                                                                                                                        994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                    PP
                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                8 8
                                                                                                                                       જે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2406 AAGCACGTCGGAGGGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2167 CATGGCACCGACCCGCGATTCAACAAGATCTTAACCGGGGAAATGTCTGATCACTCCACC 2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTACTATGAAGAAAATACTGGAAACATACAAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCCGACCCAGAACCCCCAAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTACTCCGTGCTCACGTGCACCTCCGCGATCCCCAAGGTCGAGCGGCTC 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arcacadigaagaaatrchreagacchacacagerhreagaachraanchreagir 693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGCTCAACCTCATGAACCAGGACAAAGTCCTCATGGAAAGCTGGTACTATTGAAAGAT 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chadecakindenetretretakidaretrekaneakarekaderrakindaretraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2347 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGTCGGAGGCGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGATCATGGCCAAGGACGGGCGGCGCTTCCTCCACGGGGAAATCGCGGGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>daaancamaeccaaeccrescrescrescres da a a a carcancamenta de a a a a carcancamenta a construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor de construitor </u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  274 creccakakakecerdardekedederrardragadedrarariddeerraridder
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   334 rĠĊracanarccicrtrtrtcrcrccccacargecargecargergagggggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCGAGCGCCTCCCTTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                      APPLICANT: Cahoon, Rebecca E.
APPLICANT: Rafalski, Antoni
APPLICANT: Rafalski, Antoni
APPLICANT: Shen, Jennie
TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs
FILE REPERENCE: BB137 US NA
CURRENT APPLICATION NUMBER: US/09/500,569
GURRENT FILING DATE: 2000-02-09
EARLIER APPLICATION NUMBER: 60/119,587
EARLIER FILING DATE: 1999-February-10
NUMBER OF SEQ ID NOS: 28
SOFTWARE: Microsoft Office 97
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1370;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
19.7%; Score 603.8; DB 3;
Best Local Similarity 71.9%; Pred. No. 1.3e-152;
Matches 802; Conservative 0; Mismatches 312;
                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Glycine max
-09-500-569-3
                                      Patent No. 6329204
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                      1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         214 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6 B 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Я
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
```

1746

Gaps

1806

213

273

1986

```
음 중
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                      유
장
유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       중
음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                         8 6
                                                                                                                                                                                       à
                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2645
                        GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT 2106
                                                                            GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT 2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCGGGAAAGAGACACAGAAGGAGTTCGAGGCATTTGGCCAAAGGGGCCGGATTTCAG 2705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT 2765
                                                                                                                                                                             ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2286
                                                                                                                                                                                                                                  GATGTCGGAGGCGCACTGGGGCCGTGCTCACATGATCGTTGCCAAATACCCATCAATG 2346
                                                                                                                                                                                                                                                                                    AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC 2405
                                                                                                                                                                                                                                                                                                                                      AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG 2465
                                                                                                                                                                                                                                                                                                                                                                                       TGGATATGCCATGACTGGAGGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2525
                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC 2585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTAGCTTGGCCACAAAAGGTGTGGTTCACATCGATGTGATCATGTTGGCACATAATCCA 1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTGGGAAAGAGAGACAGAGAGAGAGTTTGAGGCTCTGGCCAAAGGGTCTGGATTCCAA 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTTTCCGAGTTGTTTGCTGTGCTTTCAATACCAACATCATGGAATTTCTCAAAAAGATT 1173
                                              GCGCTCAACCTCATGAACCAGGACAAAGTCCTCATGGAAAGCTGGTACTATTTGAAAGAT 513
                                                                                            GCAGTCCTTGAAGGAGGCATTCCATTTAACAAGGCTTATGGAATGACAGCCTTTGAGTAC 573
                                                                                                                                                    cardgaacadarccaadgrirraacaaggriricaacaaggaarggcrigarcacreracc 633
                                                                                                                                                                                                       Arcacaargaadaaarrcrrgagaccracacaccrrrrgagagrcrraaarcrcrggrr 693
                                                                                                                                                                                                                                                                                                  GAGCATGTAGGTGGAGATATGTTTGCGAGTGTTCCGAAAGCTGATGCTATTTTTATGAAG 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGTTGGTGGTGGGACTGGAGCTGTAATCAACATGATTGTCTCAAAGCATCCCACTATT 753
TATGGTCTCGCCCCCGTTGCCAAGTACTTGGTTAAGAACGAAGATGGTGTCTCCATTGCT 453
                                                                                                                                                                                                                                                                                                                                                                                                              regarrreccacearregaereareacacrecrreaaerrrragaaeacrecraceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Chiang, Vincent L
APPLICANT: Carraway, Daniel T
APPLICANT: Carraway, Daniel T
APPLICANT: Carraway, Daniel T
TILE APPLICANT: Saeltzer, Richard H
TITLE OF INVENTION: Production of Syringyl Lignin in Gymnosperms;
FILE REFERENCE: 50617
CURRENT APPLICATION NUMBER: US/08/991,677A
CURRENT APPLICATION NUMBER: US 60/033,381
EARLIER APPLICATION NUMBER: US 60/033,381
SARLIER PILING DATE: 1996-12-16
NUMBER OF SEQ ID NOS: 11
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 5
LENGTH: 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rakgricrirggcargarircargicaagcigcar 1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-991-677-5

Sequence 5, Application US/08991677A

; Patent No. 6552135

; GENERAL INFORMATION:
                                                                                                  514
                                                                                                                                                                                                                                                                                                                                      2406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1054
                         2047
                                                                                                                                                    574
                                                                                                                                                                             2227
                                                                                                                                                                                                                                  2287
                                                                                                                                                                                                                                                                                    2347
                                                                                                                                                                                                                                                                                                                                                                                       2466
                                                                                                                                                                                                                                                                                                                                                                                                                                          2526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2766
                                                 454
                                                                          2107
                                                                                                                             2167
                                                                                                                                                                                                       634
                                                                                                                                                                                                                                                           694
                                                                                                                                                                                                                                                                                                            754
                                                                                                                                                                                                                                                                                                                                                              814
                                                                                                                                                                                                                                                                                                                                                                                                                 874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     994
                                                                                                                   6 8 6 8 6 8 6 8 6
                                            음 상 음
                                                                                                                                                                                                                                                                                                                                                                                                       8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                8
```

```
1949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCCTTGCTGAATGCATCCTCCCCGTGGCGCCAGACGCAAGCCTCCCCACTAAGGCAGT 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGAC-CGCC 2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AcceptangenceAccesarcencesconscinesconscined acceptance of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGCGCGTTCCTCTCCACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      531 ATTTAACAAGGCCTATGGAATGACAGCATTTGAGTACCATGGCACCGATCCCAGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTTAGTGTTCCAAAAGGAGATGCCATTTTCATGAAGTGGATATGTCATGATTGGAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                231 AGGTGCGCACATATCCACATCTGACATAGCCTCTAAGCTGCCCACAAAGAATCCAGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGCTCTACGGCTTAGCGCCGGTGTGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caaggreereargaaggreeracracragacgaggeagreergaaggregaarree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCACCTTAACATGATTATGCCTAAAATACCCCATGATGATGAGGGCATTAACTTGGACTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTCAGCGTTCCAAAGGGAGATGCCATTTCATGAAGTGGATATGCCATGACTGGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   reaccacrectrical entrangal entrangal entrangal entrangement of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATCCACATCGACTGCATCATGTTGGCCCACAACCCAGGGGGGAAAGAGAGGGCACACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGICICGGACGACGAGGCGAACCICITCGCCATGCAGCTGCGCGAGCGCCTCCGTGCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rerececacerecereacescaacareaacacerriacescerracecerrecera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGGAATCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTCAACAAGGCGTACGGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACATACAAGGGCTTCGAGGCCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGACACGAGCCTAGCGACCAAGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4,
                                                                                                                                                                                                                                                                                                                                                                         Length 1380;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                    Score 589; DB 3; I
Pred. No. 1.3e-148;
0; Mismatches 290;
; TYPE: DNA; CRGANISM: Liquidambar styraciflua; FEATURE: NAME/KEY: CDS; LOCATION: (67)..(1170)
                                                                                                                                                                                                                                                                                                                                                                         19.2%;
72.8%;
                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 72.8
Matches 787; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
```

ò g

셤 ò

셤 ò 셤

```
1047 igirgicigaaakakakakakakakakakakarrirgakicrikakikakakakakakarir 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAAGATGCCATTTTCATGAAG 2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 17. Application US/09971823B

| Sequence 17. Application US/09971823B
| Patent NO. 6610521
| GENERAL INFORMATION:
| GENERAL INFORMATION:
| APPLICANT: Cahoon, Rebecca E.
| APPLICANT: Cahoon, Rebecca E.
| TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs
| TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs
| TITLE OF INVENTION: NUMBER: US/09/971,823B
| CURRENT FILING DATE: 1999-02-10
| NUMBER OF SEQ ID NOS: 28
| SOFTWARE: Microsoft Office 97
| SEQ ID NO 17
| LENGTH: 1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCGGG---AAAGAGAGACACAGAAGGAGTTCGAGGCATTTGGCCAAAGGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGATATGCCATGACTGAGTGACGACCATTGCGGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2526 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2586 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGATTGGCCCACAACCCA
                                                                                                                                                                                                                                                           ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                         GATGICGGAGGGGCACTGGGGCGGGGCATGATGATGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                               AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                              GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                          GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                CATGGCACCGACCGGATTCAACAAGATCTTTAACCGGGGAAATGTCTGATCACTCCACC
TACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                             387 randercredececeratracraacracracracacacacaacaracredeceracrederece
                                                                                                                                         GCTCTCAACCTCATGAACCAGGACANAATCCTCATGGAAAGCTGGTACTATTTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chadgriricchadrecerdigereriteraraeerae 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2703 CAGGGCTTCCAAGT-CATGTGCTGCGCTTTCGGCACTCAC 2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
US-09-971-823B-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1107
                                                                                                                                                                                                                                                                                                                                                                                                           687
                                                                                                                                                                                                                                                                                                                                                                                                                                           2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2466
                                                                                                                                                                                                                                                                                                                                                                             2287
                                                                                                                                                      447
                                                          1987
                                                                                                                        2047
                                                                                                                                                                                    2107
                                                                                                                                                                                                                                                  2167
                                                                                                                                                                                                                                                                                  567
                                                                                                                                                                                                                                                                                                                2227
                                                                                                                                                                                                                    507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                         원
장
원
                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                          ò
                                                                                                                 상 원
                                                                                                                                                                          ⋩
                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                            g
                                                                                  ď
                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CICCCAAACCCAAAACCCCGAAGGCACCCGTCATGCTCGACCGGGATCTTCCGGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1927 AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGGCGCTC 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1687 GAGACCCAGATGACCCCGGACCCAAGTCTCGGACGACGAGGGAACCTCTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         206
                                                                              1130
                                                                                                            2785
                                                                                                                                         1131 ¢GĊTTA¢AATA¢ATGGATCAT¢GAATTTTTGAAGAAGATTTTGAGTCCTTA¢TCGGCTTTG 1190
               GGTCCATATTGATGTCATCATGTTGGCTCATAACCCCAGGTGGGAAAGAGAGAACTGAGAA 1070
                                                                                                                                                                                                                                                                            Sequence 17, Application US/09500569
; Sequence 17, Application US/09500569
; Patent No. 6329204
; GENERAL INFORMATION:
; APPLICANT: Cahoon, Rebecca E.
APPLICANT: Refalski, Antoni
APPLICANT: Shen, Jennie
; TITLE OF INVENTION: Plant Caffeic acid 3-O-Methyltransferase Homologs
; TITLE OF INVENTION: Dante:
; TILE REFERENCE: BB13.7 US NA
; CURRENT EILING DATE: 2000-02-09;
; CARLIER APPLICATION NUMBER: 60/119,587
; EARLIER FILING DATE: 1999-February-10
; NUMBER OF SEQ ID NOS: 28
; SOFFWARE: Microsoft Office 97
; SEQ ID NO 17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1747 CTGGCGAGCGCCTCCGTGCTCCCTAAAGGCCGCCATCGAGATCGACTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGATCATGGCCAAAGGACGGCCGCGCTTCCTCCACGGGGAAATCGCGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1071 GGAGTITGAGGCCTTGGCCAAGGGGGCTGGATTTGAAGGTTTCCGAGTAGTAGCCTCGTG
                                                                                                            CGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                GGAGITCGAGGCAITGGCCAAAGGGGCCGGAITTCAGGGCTICCAAGTCAI---GIGCIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 72.2%; Pred. No. 7.2e-140;
Matches 765; Conservative 0; Mismatches 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY: unsure
LOCATION: (1180)
FEATURE:
NAME/KEY: unsure
LOCATION: (1262)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: unsure
LOCATION: (472)
FEATURE:
NAME/KEY: unsure
LOCATION: (1156)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ) NAME/KEY: unsure
; LOCATION: (1302)
US-09-500-569-17
                                                                                                                                                                               A 2786
                                                                                                                                                                                                                 A 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : 1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
                                                                                                                      2726
                                                                                                                                                                                   2786
                                                                                                                                                                                                                 1191
                         1011
                                                        2669
```

g ઠે

g ò 셤 ઠે 셤 8

8

2645 1046 2702

2585

986

2525

998

2405

2346

2286

2106

2585

986

```
1986 CTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGC 2045
747 AAGGGCATTAATTTTGATTTGCCCCATGTCATTGAAGATGCCCCATCTTATCCAGGAGTG 806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09453323
; Sequence 1, Application US/09453323
; Patent No. 6441272
; Patent No. 6441272
; TITLE OF INVENTION:
; TITLE OF INVENTION: MODIFICATION OF LIGNIN CONTENT AND COMPOSITION IN
; TITLE OF INVENTION: PLANTS
; FILE REFERENCE: 235.00090101
; CURRENT APPLICATION NUMBER: US/09/453,323
; CURRENT FILING DATE: 1999-12-02
; PRIOR PILING DATE: 1998-12-02
; NUMBER OF SEQ ID NOS: 13
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
; LENGTH: 1507
                                                                                                                                                                                                                                                                                 987 TCTAGCTTGGCCACAAAGGGTGTGGTTCACATGTGATGATGATGTTGGCTCACAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         200 GCTCTCAAACTCAGAAACCCCAGAAGCACCTGTTATGCTTGATCGGATGCTTAGGCTACTTGC
                                      2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                      807 GAACATGTTGGTGTGTTTGTCAGTGTTCCAAAAGCTGATGCTATTTTTATGAAG
                                                                                                         2466 TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                            867 TGGATTTGCCACGATTGGAGTGATGAGCACTGCTTGAAGTTTTTGAAGAACTGCTATGAG
                                                                                                                                                                                                                927 GCACTACCAGATAATGGGAAAGTGATTGTGGGCGGAATGCATTCTTCCGGTGGCTCCAGAC
                                                                                                                                                                                                                                                  2586 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAACCCA
                                                                                                                                                                                                                                                                                                                        2646 GGCGGG----AAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1686 CGAGACCCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1746 GCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1806 CGAGATCATGGCCAAGGACGGGCCGCGCGTTCCTCTCCACGGGGAAATCGCGGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140 reagciaargecraagecreerceagerecrerrirerecrerreaarragerecrea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1866 GCTCCCGACCCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1926 CAGCTACTCCGTGCTCCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            260 Trcriacicretricicarricracicriragaacacigecrearageagrefreaeagecr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                  1107 CAAGGTTTCCAAGTCCCTGTGCTGTGCTTTCAATACCTAC 1146
                                                                                                                                                                                                                                                                                                                                                                                                2703 CAGGGCTTCCAAGT-CATGTGCTGCGCTTTCGGCACTCAC 2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
17.0%; Score 523; DB 3; L
Best Local Similarity 69.1%; Pred. No. 9.3e-131;
Matches 743; Conservative 0; Mismatches 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA ORGANISM: Nicotiana tabacum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-453-323-1
                                                                                                                                                                               2526
                                                                  요
                                                                                                                                     요
                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                               ठे
                                                                                                         8
                                                                                                                                                                               ò
                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC 2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGTCGGAGGCGCCCTGGGGCCCTCCAGCATGATCGTTGCCAAATACCCATCAATG 2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGGAACGGATCCAAGGTTTAACAAGGTTTTCAACAAGGGGATGGCTGATCACTCTACC 626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGGTCTCGCCCCTGTTGCTAAGTACTTGGTCAGGAACGAAGATGGTGTCTCCATTGCT 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CICCCAACACACAACCCTGATGCACCCGTTATGTTGGACCGTATATTGCGCCTCTTGGCT 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           327 recracaararcerererritrererregeaererecereargedaaggregaageere 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAGTCCTTGAAGGGGGTATTCCATTTAACAAAGCATATGGAATGACAGCCTTTGAATAC 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTAGCCAGTGCCTCAGTACTCCCTATGGTTCTCAAATCAGCTCTTGAGCTTGATCTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGATCATGGCCAAGGACGGCCCGGCCCGTTCCTCCACGGGGGAAATCGCGGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   207 GABATCATAGCCAAGGCTGGCCTTGGTTCACCTTTCCCCCTCCGACATTGCTTCTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                 cch 18.1%; Score 556.6; DB 3; Length 1314; al Similarity 72.2%; Pred. No. 7.2e-140; 765; Conservative 0; Mismatches 290; Indels 5;
                                                                                                                                                                                                                  H
                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                 G or
                                                                         Ö
                                                                                                                                                                                                                  Ü
                                                                                                                                                                                                                                                                                          U
                                                                                                                                              Ø
                                                                                                                                                                                                                                                                                                                                                                 ú
                                                                         ΰ
                                                                                                                                                                                                                    ϋ
                                                                                                                                                                                                                                                                                          Ú
                                                                                                                                              ပဲ
                                                                         Ä
                                                                                                                                              Ä
                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                 n = A
                                                                                                                                          c
                                                                                                                                                                           NAME/KET: unBure
LOCATION: (1180)
OTHER INFORMATION: IN
FEATURE:
NAME/KEY: unBure
LOCATION: (1262)
OTHER INFORMATION: IN
                                                                                      FEATURE:
NAME/KEY: unsure
LOCATION: (1156)
OTHER INFORMATION: n
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 765; Conserv
                                    NAME/KEY: unsure
LOCATION: (472)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                          LOCATION: (1302)
OTHER INFORMATION:
     Glycine
                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: unsure
                                                                                                                                                                                                                                                                                                                                                                               US-09-971-823B-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               687
                                                                                                                                                              FEATURE:
                      FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     음 장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ર્જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
```

1745

79

2

5;

1805

139

1985

```
CACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGTTGGCCCACAACCC 2644
                                                                                                                                                                                                                                                                                                                                                                    AGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCA 2704
                                                                                                                                                                                                                               2165
                                                                                                                                                              CGAIGICGGAGGGGGCACTGGGCGTGCTCAGCATGATCGTTGCCAAATACCCATCAAT 2345
                                                                                                                                                                                                GAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCCACCCCTTCCTGGTGT 2404
                                                                                                                                                                                                                                                                 2465 GIGGATATGCCATGACTGGACGACATIGCGCGAAGTTCCTCAAGAACTGCTACGA 2524
                          2046 CGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGA 2105
                                                                                          2166 TCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCAC 2225
                                                                                                                            2226 CATTACTATGAGGAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGT 2285
                                                                                                                                                                                                                                                                                                                                                   920 TACATCACTTGCAACTAAGAATACAGTACATGATGATGTTGTGATGTTAGCACATAACCC 979
                                                                                                                                                                                                                                                                              619
                                                                                                                                                                               619
                                                                                                                                                                                                         439
                                                          559
320 TPATAGTCTGGCTCCCGTCTGTAAGTACTTGACTAAGAATGCTGATGGTGTTTCTGTTGC 379
                                                                                                                                                                                                                                                                                                                                                                                                     2705 GGGCTTCCAAGTCCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAG 2759
                                                                                                                                                                                                                                                                                                                                                                                                                  560 TAIGTCAATGAAGAAGATTCTTGAGGACTACAAAGGATTTGAAGGCCTAAATTCCATTGT
                                                                                                                                                                         620 TGATGTTGGTGGTGGAACGGGTGCTACAGTTAACATGTCTCTAAATATCCCTCTAT
                                      2585
                                                                                                                                                                                                                                                                                                                                                                         2645
                                                                                                                                                                                                    2346
                                                                                                                                                                   2286
                                                                                                                                                                                                                                     2405
                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                              8 8
                                             d
                           ò
```

Search completed: November 1, 2006, 11:48:33 Job time : 572.583 secs

```
1: FEMC_Celerra_SIDS3/ptodata/2/pubpna/USO7_PUBCOMB.seq:*
2: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
3: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
4: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USO9B_PUBCOMB.seq:*
5: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USO9C_PUBCOMB.seq:*
6: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USOOC_PUBCOMB.seq:*
7: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIOB_PUBCOMB.seq:*
8: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIOB_PUBCOMB.seq:*
10: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIOB_PUBCOMB.seq:*
11: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIOF_PUBCOMB.seq:*
11: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIOF_PUBCOMB.seq:*
11: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIOF_PUBCOMB.seq:*
13: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIOF_PUBCOMB.seq:*
14: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
14: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/USIIB_PUBCOMB.seq:*
                                                                                                                                                                                                                                                             November 1, 2006, 11:25:56; Search time 3927.54 Seconds (without alignments) 9604.757 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 agcaccatcagcaaaaaata........acttcgaacaaaaaaaaa 3070
GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18892170 segs, 6143817638 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Published_Applications_NA_Main:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                             OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-702-319A-113
3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                       Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.

Sequence 113, App Sequence 113, App Sequence 60, Appl Sequence 60, Appl Sequence 60, Appl Sequence 107, Appl Sequence 12, Appl Sequence 12, Appl Sequence 12, Appl Description US-10-137-036-113 US-10-702-319A-113 10 Length DB 3070 3070 2096 2096 2096 1630 Query Match 3070 3070 2020.4 2020.4 2020.4 1429.6 638.2 638.2 Score

Sequence 5, Appli Sequence 5, Appli Sequence 20299, A Sequence 11, Appl Sequence 3, Appli Sequence 3, Appli Sequence 5, Appli

US-10-424-599-20299 US-10-469-993-11 US-10-464-610-3 US-09-796-256A-5

631 613.4 613 603.8 589

Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli Appli	6
υμωντιακά τη τη από τη από τη αποκομη κριτική τική αμγωντιαρά τω 400 ακουρ	Gaps
Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Seq	3070;
9/724,	Length Indels
s sich	DB 6;
0-681-878A-5 -4464-610-17 -423-463-3 -123-463-3 -123-298-3 -129-298-3 -129-298-4 -129-298-4 -129-298-4 -129-298-4 -129-298-4 -129-298-4 -129-298-4 -129-298-4 -129-298-4 -129-298-7 -149-114-2 -289-757-150 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-41 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-41 0-955-745-40 0-955-745-40 0-955-745-40 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745-41 0-955-745	core 3070; lred. No. 0;
US-10-681-878A-5 US-10-681-878A-5 US-10-239-464-610-17 US-10-239-464-610-17 US-10-23-61-3 US-10-425-13-30-91-1 US-10-289-757-149 US-10-289-757-149 US-10-289-757-149 US-10-289-757-149 US-10-289-757-149 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-389-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-289-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389-757-419 US-10-389	ΩÃ
10 US-10 8 US-10 8 US-10 8 US-10 8 US-10 8 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10 10 US-10	; \$0. ; \$0.
19.2 1380 10 18.1 1314 8 18.1 1314 8 17.4 1460 3 17.4 1460 3 17.2 1460 3 17.2 1460 3 17.2 1460 3 17.2 1418 3 17.0 1418 3 17.0 1418 3 15.8 1429 7 15.4 1428 7 15.4 1429 7 15.4 1429 7 15.3 1429 7 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1429 10 15.3 1440 8 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1000.1036c4 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665 9 13.8 1665	100. 100. vative
589 19.2 1380 554.4 17.4 534 554.4 17.4 534 523.2 17.2 1181 524.4 17.4 534 529.2 17.2 1182 529.2 17.2 1184 529.2 17.2 1184 485 15.8 485 472.8 15.4 1455 472.8 15.4 1455 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 15.4 1457 472.8 13.8 177 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1565 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.8 1566 472.8 13.4 1457 472.8 13.8 1566 472.8 13.4 1457 472.8 13.8 1566 472.8 1	100 Similarity 100
POR COLOR CONTROL OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF COLOR OF	307
18 556 20 556 20 556 21 534 22 23 529 23 529 24 472 25 472 26 475 27 472 31 472 33 472 34 472 34 472 34 472 36 466 38 467 39 472 31 472 31 472 32 472 42 422 43 472 44 419 45 419 45 419 46 419 47 419 48 472 49 472 40 424 41 422 41 422 42 422 43 472 44 419 45 419 46 419 47 419 48 419 48 419 49 419 41 422 41 422 42 422 43 472 44 419 45 419 46 419 47 419 48 419 48 419 48 419 49 419 49 419 410 410 410 410 410 410 410 410	Quer Best Matc

```
ATTGAGATTCGGTGGTATGATGCCAGAATTAAAAAGTGCTGCACTGATGAGAATAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTGAGATGACCTACAGTGATAGCTTGATGATAAGATAGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATTITCTGACTITAAAITGAIGTAGAACCICTTAGACTATTAAAATATTGTCCTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGGTATTGCTCTAATTGTTCAGGATGTGGTACCTTGGGTATTAGGGCTATGATGGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCACCATCAGCAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATTGCATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGATAGTCCTTTAGAAAGTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TICCACCCIAICAIAGGCITICIGCAIAICCAITITIAAGAACAGCCCGGAAITGACGICI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGAACAGCCCGGAATTGACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGCGATTGGCAATCACCTTAGAAATGATCTTATATGCGTAATTACAAAGACTGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCACCATCAGCAAAAATAGATGGGATAGAGTGGGGACACCACCTGT
         CURRENT APPLICATION NUMBER: US/10/702,319A

CURRENT FILING DATE: 2003-11-06

FRIOR APPLICATION NUMBER: U.S. No. 10/291,447

FRIOR APPLICATION NUMBER: U.S. No. 10/291,447

FRIOR APPLICATION NUMBER: U.S. No. 60/425,087

FRIOR APPLICATION NUMBER: U.S. No. 10/137,036

FRIOR APPLICATION NUMBER: U.S. No. 09/724,624

FRIOR FILING DATE: 2002-04-30

FRIOR FILING DATE: 2000-11-28

FRIOR FILING DATE: 2000-11-28

FRIOR APPLICATION NUMBER: U.S. No. 09/598,401

FRIOR APPLICATION NUMBER: U.S. No. 60/146,591

FRIOR APPLICATION NUMBER: U.S. No. 60/146,591

FRIOR FILING DATE: 2000-02-24

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25

FRIOR FILING DATE: 1999-03-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Score 3070; I; Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.0%;
Matches 3070; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
CRGANISM: Eucalyptus grandis
US-10-702-319A-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                              2460
                                                                                                                                                                                                                                                                               2460
                                                                                                                                                                                                                                                                                                                                                                                       2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT 2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA 2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCCCTTTTCTCACAGATTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA 2880
 GAGTATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCAC 2220
                                                                                                                          GTGGTCGATGTCGGAGGCGGCGCGTGCTCAGCATGATGCTTGCCAAAATACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                           TCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTG
                                                                                                                                                                                                                                                                  GTGTCAAGCACGCGAGGGCGACATGTTCGTCGTCCAAAGGGAGATGCCATTTTCA
                                                                                                                                                                                                                                                                                                                                    ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACCCCTGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCAGGCTTTCCAAGTCATGTGCTGTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                    GTGGTCGATGTCGGAGGCGCCACTGGGCCCGTGCTCGTTGCCCAAATACCCA
                                                                                                                                                                                                                                              GTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                                                                                                                                                                                                                                                                                                                    TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                       ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAAACGAAACGGCGTATATGGAT
                                                                 TCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
US-10-702-319A-113
US-10-702-319A-113
Sequence 113, Application US/10702319A
Publication No. US20050026162A1
GENERAL INFORMATION:
APPLICANT: Perera, Ranjan
APPLICANT: Eagleton, Clare
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2581
                                  2221
                                                                   2221
                                                                                                                                      2281
                                                                                                                                                                                                            2341
                                                                                                                                                                                                                                             2401
                                                                                                                                                                                                                                                                               2401
                                                                                                                                                                                                                                                                                                                    2461
                                                                                                                                                                                                                                                                                                                                                    2461
                                                                                                                                                                                                                                                                                                                                                                                       2521
                                                                                                                                                                                                                                                                                                                                                                                                                          2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3061
                                                                                                      2281
                                                                                                                                                                           2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                               9 6 9
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음 참
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
유
                       ઠે
                                                             요
                                                                                                      ð
                                                                                                                           g
                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                           6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6
```

ö

Gaps

ö

180

240 240

120 120

9

300

300

360 360 420 420 480 480 540 540 900

us-10-702-319a-113.rnpbm

1911 ATTOCHICAGATICAGACATICACTICATICATICATICATICATICATICATICA
8 4 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
61 ATCHCGGATTATCCGATGATAAAAAGTCCTGCACTTCAACCTCTGATCGAAATAACTCCTGATTCAACCTGGATCCCGG 720 61 ATCTCGGATTATCCCAACTGATCCTGATCAAAAAGTCCATTCAACCTACTGAAACCCGG 720 61 ATCTCGGATTATCCATCTGATCATTCATCTCTCTTCTAACCTACTGAAACCCGG 720 721 GACCTTGGTAACTCATCATCATCATCATCATTCATCATCAACCTACTCAAAACCTACTCAAAACCAACCAACCTACTCAAAAACCTACTCAAAAACCTACTCAAAAAA

B & B & B & B & B &

GATAAAAAGGTAGGGAGTCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAATA AGGCAAAAGTTCGCCGTTGAATTTGACGCAAAAGACACCGTCGTTATGCATTGCATGAT AGGCAAAAGTTCGCCGTTGAATTTGACAGAAAAGACCCGTCGTTATCCATTGCATGAT CCATTGTACCCCTTAGAATTTGACAGCAAAAGACCCGTCGTTATCCATTGCATGAT CCATTGTACCCCTTAGAGGTGAAATCCTAGAGTGAGGAGATGATCCTTTAGAAAGTTCCCA TTCCACCCTTATCATAGGGTGAAATCCTAGAGTGAGGAGATGACCTTTAGAAAATTTTTGACGTTTTTTTT	11
8 8 8 8 8 8 8 8	8 4 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
GAGCCCTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA 2880 GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA 2880 GAGCCCTTTTCTCAGTTGGCGCAACCCAAGTTCTTCTCCATAAAAGGAAACAATA 2880 GAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTTGTTGTTCTTTTATGTCTATAA 2940 GAAAGCGACTGTATGATGAGGAAGTTACAAGATTTGTTGTTTTTATGTCTATAA 2940 GAAAGCGACTGTATGATGAGAAGTTACAAGATTTGTTGTTTTTATGTCTATAA 2940 GAAAGCGACTGTATGATGAGAAGTTACAAGAATTGTTGTTTTTATGTCTATAA 2940 GAAAGCGACTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT 3000 GTGCCTGAATGAGAATTGTGATATTCTGTCTTTTTTCAGTAAATCACTTCGAACA 3060 GTGCCTGAATGAGAATTCTGTCTTCTTTTTTCAGTAAATCACTTCGAACA 3060 GAAAAAAAAA 3070 GAAAAAAAAA 3070 GAAAAAAAAA 3070	U. 3 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Us/10927641 Application Clare Application Clare Application Clare Application Clare Application Us/10927641 Application Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927641 Application Windler Us/10927644 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/1092764 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application Windler Us/109276 Application W
2821 GAGCCCTTTTC 2821 AGAGCCTTTTT 2881 AGAAGCGACTC 2941 AGTTTTGAGTC 2941 AGTTTTGAGTC 2941 AGTTTTGAGTC 3001 GTGCCTGAATC 3001 GTGCCTGAATC 3001 AAAAAAAAAA 3061 AAAAAAAAAAA	ULT 3 10-927-641-113 equence 113, Application US/10927641 eduence 113, Application US/10927641 ENERGAL INFORMATION: APPLICANT: Rice, Stephen APPLICANT: Eagleton, Clare APPLICANT: Annete APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANT: Wood, Marion APPLICANTON NUMBER: PRIOR APPLICAT PRIOR FILING DATE: 2000-06-20 PRIOR APPLICATION NUMBER: U.S. No. 09/724 PRIOR FILING DATE: 2000-06-20 PRIOR FILING DATE: 2000-06-20 PRIOR FILING DATE: 2000-06-20 PRIOR FILING DATE: 1999-07-30 PRIOR FILING DATE: 1000-02-24 PRIOR FILING DATE: 1000-03-25 WHORE FILING DATE: 1000-03-25 WHORE FILING DATE: 1000-03-25 WHORE FILING DATE: 1000-03-25 WHORE FILING DATE: 1000-03-25 WHORE FILING DATE: 1000-03-25 WHORER OF SEQ ID NOS: 143 LENGTH: 3000 TYPE: DNA 10-927-641-113 1 AGCACCATCAGCAAAAATAGATGGGATAG

· à a à a à

2311 TCAATGAAAGGGATCAACTTCGACCCCAACGGATTGAAGGCCCCCACCCTCTCTG 2400 2301 TCAATGAAAGGGATCAACTTCGAACGCCCTCAAAGGGAAATGCCCCCCACCTTCTTG 2400 2401 GTGTCAAGCACGTCGAACATTCGATCCAAAGGGAAATGCCTCTAAAGGGAAATTCTTTCAAAGGGAAATTCCATAAGAACCCCCTTTTTCA 2460 2401 GTGTCAACACGACCCTGAACTTCGTCAACGCATTCCTCAAAGGAAATTCCTTTTCAAAGTAACTTCCTTAAAGAACACTTTTTCAAAGTAACTTCCTCAAAGAATTCCTTCAAAGAAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAGAATTCCTTCAAAAAAAA	RESULT 4 US-10-13-036-60 Sequence 60, Application US/10137036 Sequence 60, Application US/10137036 Publication No. US20030101478A1 Publication No. US20030101478A1 Publication No. US20030101478A1 APPLICANT: Rice, Stephen APPLICANT: Bagleton, Clare APPLICANT: Lasham, Annete APPLICANT: Wood, Marion APPLICANT: Wood, Marion TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Modification of Gene Expression TITLE OF INVENTION: Modification of Gene Expression TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Demonstration of Gene Expression TITLE OF INVENTION: Demonstration of Gene Expression TITLE OF INVENTION UNMBER: US/10/137,036 CURRENT APPLICATION NUMBER: PCT/NZ 01/00115 PRIOR PILING DATE: 2001-06-20 PRIOR PILING DATE: 2000-11-28 PRIOR FILING DATE: 2000-11-28
1261 CATCACCAGATCGGCCAGTAATATTAATTAACAAATAGCTCTTGCCGGGAA 1320 1321 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 1322 13	041 041 101 1101 1161 1221 2221 2281

8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6

ර සි ර

```
1841
         821
                      1855
                                   881
                                                 1915
                                                              941
                                                                           1975
                                                                                         1001
                                                                                                     2035
                                                                                                                  1061
                                                                                                                                2095
                                                                                                                                             1121
                                                                                                                                                           2155
                                                                                                                                                                        1181
                                                                                                                                                                                      2215
                                                                                                                                                                                                    1241
                                                                                                                                                                                                                                            2335
                                                                                                                                                                                                                                                        1361
                                                                                                                                                                                                                                                                      2395
                                                                                                                                                                                                                                                                                   1421
                                                                                                                                                                                                                                                                                                2455
                                                                                                                                                                                                                                                                                                              1481
                                                                                                                                                                                                                                                                                                                           2515
                                                                                                                                                                                                                                                                                                                                         1541
                                                                                                                                                                                                                                                                                                                                                      2575
                                                                                                                                                                                                                                                                                                                                                                   1601
                                                                                                                                                                                                                                                                                                                                                                                 2635
                                                                                                                                                                                                                                                                                                                                                                                              1661
                                                                                                                                                                                                                                                                                                                                                                                                           2695
                                                                                                                                                                                                                                                                                                                                                                                                                         1721
                                                                                                                                                                                                                                                                                                                                                                                                                                      2755
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2875
                               8 & 8
                                                                                                                                                                    8 6 8 6 8 6
                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                        8 8 8
                                                                                                                                                                                                                                                                                                                                                              Dp
         8 8
                                                                        6 B 6
                                                                                                              a
                                                                                                                              6 B 6
                                                                                                                                                                                                                                                                  ठ
                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                               $ B $
                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            名
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠ
                                                                                                                                                                  1138
                                                                                                                                                                                             1198
                                                                                                                                                                                                                                                  1318
                                                                                                                                                                                                                                                                             1378
                                                                                                                                                                                                                                                                                                                                  1494
                                                                                                                                                                                                                                                                                                                                                             1554
                                                                                                                                                                                                                                                                                                                                                                                        1614
                                                                                                                                                                                                                                                                                                                                                                                                                   1674
                                                                                                                                                                                                                                                                                                                                                                                                                                             1734
                                                                                                                                                                                                                                                                                                       1795 ATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGCGCGTTCCTCCTCCACGGGGGAA 1854
                                                                                                                                                     100
                                                                                                                                                                                                                                                               340
                                                                                                                                                                                                                                                                                          400
                                                                                                                                                                                                                                                                                                                     460
                                                                                                                                                                                                                                                                                                                                               520
                                                                                                                                                                                                                                                                                                                                                                                                     640
                                                                                                                                                                                                                                                                                                                                                                                                                                                          760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTCAAGGCCGCCATCGAG 820
                                                                                                                                      ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                       TCGACCGGATCCGAGACCCCAGATGACCCCGACCCAAGTCTCGGACGAGGAGGCGAACCTC
                                                                                                                                                                 CGAATTTCTCTTTTAGGTAAGCAATGATGAGGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                     GTATGATCTTGGAGTTGTTGGTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                              ACATATTGGTGTAGGGTCCAATATTTTGCGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                  TCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGGGAACCTC
                                                                                                                                                                               CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                             GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                       AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                   AGAGITITCICICIATATICIGGITCACCGGITGGAGICAAIGGCAIGCGIGACGAAIGI
                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                            Length 2096;
                                                                                                                          4
PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 09/598,401
PRIOR FILING DATE: 2000-06-20
PRIOR PILING DATE: 2000-02-24
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 09/276,599
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWARE: FASTESQ for Windows Version 4.0
                                                                                                                         11; Indels
                                                                                                            DB 6;
                                                                                                           Score 2020.4;
Pred. No. 0;
0; Mismatches
                                                                                                                         .
                                                                                                           Query Match
Best Local Similarity 99.3%;
Matches 2041; Conservative
                                                                                        ; ORGANISM: Eucalyptus grandis
US-10-137-036-60
                                                                                                                                                                                                                       1199
                                                                                                                                       1019
                                                                                                                                                                  1079
                                                                                                                                                                                                                                                 1259
                                                                                                                                                                                                                                                                             1319
                                                                                                                                                                                                                                                                                                       1379
                                                                                                                                                                                                                                                                                                                                   1435
                                                                                                                                                                                                                                                                                                                                                             1495
                                                                                                                                                                                                                                                                                                                                                                                        1555
                                                                                                                                                                                                                                                                                                                                                                                                                   1615
                                                                                                                                                                                                                                                                                                                                                                                                                                             1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1735
                                                                                                                                                     41
                                                                                                                                                                                101
                                                                                                                                                                                                         161
                                                                                                                                                                                                                                    221
                                                                                                                                                                                                                                                               281
                                                                                                                                                                                                                                                                                           341
                                                                                                                                                                                                                                                                                                                     401
                                                                                                                                                                                                                                                                                                                                               461
                                                                                                                                                                                                                                                                                                                                                                          521
                                                                                                                                                                                                                                                                                                                                                                                                     581
                                                                                                                                                                                                                                                                                                                                                                                                                                 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                          701
                                                                                  TYPE: DNA
                                                                                                                                                 g
                                                                                                                                                              8 6 8 6
                                                                                                                                                                                                                   음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 8 8
                                                                                                                                        ઠે
```

1180 2274 1300 1540 1660 2694 1780 1974 2094 2154 2214 2394 2454 Trccregrercaagcacgregaggegacaterrecercacgerrecaaaggagargeca 1480 2514 2574 2634 1720 2754 2814 1840 GIGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA 2874 2934 1914 TTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGA TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTC CGGCTGCTGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAG GATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTC CTCGACCTCCTCGAGATCATGGCCAAGGCCGGGCCGGGGCGTTCCTCTCTCCCCGGGGGGAA CGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAG GTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTAT TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACC ACTGCTACGATGCGCTTCCCCAACAATGGAAAGGTGATGGTTGCAGAGTGCGTACTCCCTG TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATGGACTGCATCATGTTGG CCCACAACCCAGGCGGGAAAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG CCCACAACCCAGGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG GTCTCCATCGCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTAT TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACC GATCACTCCACCATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTC TTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGA ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTG TGAAGACCGCTTGATCTGCTCCTCTGTGTGTTCATGGTTCTTGGATTTGAAAGGTC ACAATAAGAAGCGGCTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGT GTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGG TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCC TTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGGGGTTCCAAAGGGGAGTGCCA

• • • • • • • • • • • • • • • • • • • •	1435 AGAGTTTTCTCTATATTCTGGTTCACGGTTGAGTCAATGGCATGTGAGCAATGT 1494 461 AGAGTTTTCTCTCTATATTCTGGTTCACGGTTGGAGTCAATGGCAGAGTGTGACGAATGT 1494 461 AGAGTTTTCTCTCTCTCTGGTTCAGTTGAGTCAATGGTAGTGAATGT 520 1495 ACATATTGGTGAGGGTCCAATATTTTGCGGAGGGTTGGTGAACGCAAAGTTCCTATA 1554	1555 1555 581 1615	1675 TCGACCGGCTCCC 1675 TCGACCGGATCCC 1735 TTCGCCATGCAGC 1737 TTCGCCATGCAGC 1737 TTCGCCATGCAGC	1795 1795 821 1855 881	1915 941 1975 1001	1061 GTCTCCATCGCGCACTCAACTTGAAGACCAGGACAAATCCTCATGGAAGCTGGTAT 112 1061 GTCTCCATCGCGCACTCAACACTTGAAGACCAGGACAAATCCTCATGGAAGCTGGTAT 112 2095 TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGATGACC 215 1121 TACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAGGCGTACGGGAATGTC 215 2155 GCGTTCGAAAGCACGACCGACGGGAATCTCAACAAGACTTAAACCGGGAATGTC 221	1181 GCGTTCCACACACACACACACACACACACACACACACACA
4 6 6 6	\$ 6 B &	3 & A & 1	8 8 8 8	3 8 8 8	6 6 6 6	S 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	4 8 8 8 8 8
1901 ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTTATGT 1960	Qy 3055 CGAACAAAAAAA 3070 	Sequence 60, Application US/10702319A Publication No. US2050026162A1 GENERAL INFORMATION; APPLICANT: Perera, Ranjan APPLICANT: Bice, Stephen APPLICANT: Bagleton, Clare TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Modification of Gene Expression	FILE REFERENCE: 11000.1036c5 ; CURRENT APPLICATION NUMBER: US/10/702,319A ; CURRENT FILING DATE: 2003-11-06 ; PRIOR APPLICATION NUMBER: U.S. No. 10/291,447 ; PRIOR FILING DATE: 2002-11-08 ; PRIOR APPLICATION NUMBER: U.S. No. 60/425,087 ; PRIOR APPLICATION NUMBER: U.S. No. 10/137,036	PRIOR FILING DATE: 2002-04-30 PRIOR APPLICATION NUMBER: U.S. No. 09/724,624 PRIOR FILING DATE: 2000-11-28 PRIOR FILING DATE: 2000-06-20 PRIOR FILING DATE: 2000-06-20 PRIOR PILING DATE: 2000-02-24 PRIOR APPLICATION NUMBER: U.S. No. 60/146,591	· σ	Ouery Match 65.8%; Score 2020.4; DB 9; Length 2096; Best Local Similarity 99.3%; Pred. No. 0; Matches 2041; Conservative 0; Mismatches 11; Indels 4; Gaps 1019 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT 41 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCGTAACTGT 41 CTGAGCCATTTAATTCGAGAGCACATCGCCCCAAAATTATTCTTCTTGCTGCCGTAACTGT	OY 1079 CGAATTTCTCTTTTAGGTAACCAATGATGGCCATGTTGAAAAGGCTGATTA 1138 DD 101 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGACCAAAAAGGCTGATTA 1138 101 CGAATTTTCTCTTTTAGGTAAGTAACTAACTATGATGAAAAAAGGCTGAAAAAAGGCTGAATA 160 OY 1139 GTATGATCTTGGATTGTTGGTCCAAATTTGCAAGCTGACGATGCCCCTCAGGGAAATT 1198 DD 161 GTATGATCTTGGAAGTTGTTGGTTGCAAATTTGCAAAGACGATGGCCCCTCAGGGAAATT 220 OY 1199 AAGGCGCCAACCCAGATTGCAAAAATTGCCAAAGAGCACGACCCTTCCTT

셤 ઠે 셤

g ò

ઠે

g

8

යි යි જ

```
1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    761 rresectarscascresceasecerrecerscrecectecearscreerearesecercears
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 221 AAGGGGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           281 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      701 TCGACCGGATCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGGAGGAGGCGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATGATCTTGGAGTTGTTGGAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            161 GTATGATCTTGGAGTTGTTGGTGCAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1199 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1435 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGCCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1495 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                581 TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      crecririccririgerceagrercecegaagagagagagagagagagagagagargggr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGACCGGCTCCGAGACCCAGATGACCCCGACCAAGTCTCGGACGACGACGAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1735 TTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   461 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1555 TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTATCTCTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1019 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 2020.4;
Pred. No. 0;
0; Mismatches
PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
PRIOR FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: PCT/NZ00/00018
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-07-30
PRIOR PILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
NUMBER OF SEQ ID NOS: 143
SEQ ID NO 60
LENGTHH: 2096
        APPLICATION NUMBER: U.S. No. 09/598,401
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 99.3%;
Matches 2041; Conservative
                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Eucalyptus grandi
                                                                                                                                                                                                                                                                                                                                                                                                 US-10-927-641-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     જે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2080
        TACCCATCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCC 1420
                                                                                                                                                                                                                                                                                                                      ACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAGACCGCTTGATCTGCTCCTCTGTGGTGATCTTCATGGTTCTTGGATTTGAAAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCACGTTCCAAAGGGAGATGCCA
                                                                                                                                                                         TTTTCATGAGAGTGGATATGCCATGACTGGACGACCATTGCGCGAAGTTCCTCAAGA
                                                                                                                                                                                                                                TTTTCATGAAGTGGATATGCCATGACTGGGGGGGCCATTGCGCGAAGTTCCTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        retacceagacacagectagegaccaagaarergarecacaregacrecarerrar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAGACCGCTTGATCTGCTCCTCTGTGGTGTTCATGGTTCTTGGATTTTGAAAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAATAAGAAGCGACTGTATGATGATGGCGCAAGTGGGAAGTTTGTTGTTTTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGCCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGGATGTGCCTGAATGAGAAATTGTGATATTCTGTCTTCTTTTCAGTAAATCACTT
                                                                  Trectegraterangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrangeaegrang
                                                                                                                                                                                                                                                                                                                                                                                                    TGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCACACACCCAGGCGGGAAAGAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAATAAGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 60, Application US/10927641

Sequence 60, Application US/10927641

Bublication No. US20050244968A1

GENERAL INFORMATION:

APPLICANT: Perera, Ranjan

APPLICANT: Bagleton, Clare

APPLICANT: Ladaman, Annette

APPLICANT: Uses, Stephen

APPLICANT: Uses, Elizabeth

TITLE OF INVENTION: Compositions and Methods for the

TITLE OF INVENTION: Composition of Gene Expression

FILE REFERENCE: 11000.1036c4

CURRENT FILING DATE: 2004-08-27

PRIOR FILING DATE: 2002-04-30

PRIOR FILING DATE: 2001-06-03

PRIOR FILING DATE: 2001-06-03

PRIOR FILING DATE: 2001-06-03

PRIOR FILING DATE: 2001-06-03

PRIOR FILING DATE: 2001-06-03

PRIOR FILING DATE: 2001-10-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAACAAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAACAAAAAAAAA 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-927-641-60
                                                                                                                     1421
                                                                                                                                                                                                                                1481
                                                                                                                                                                                                                                                                                                                                             1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3055
                                                               2395
                                                                                                                                                                            2455
                                                                                                                                                                                                                                                                                      2515
                                                                                                                                                                                                                                                                                                                                                                                                    2575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2081
```

g

ઠે d ઠ

q

ઠે g ઠે g

g

ઠે 셤

ò

TCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCA

요

ઠ

셤 ઠે 셤 ò

ò

g

a

ò

8

В ò g ઠે 요

```
1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1,138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1319 AACTCCGTATTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 CGAATTTTTTTTAGGTAAGTAACCAATGATGCATCATGTTGACAAAAGGCTGATTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1019 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CTGAGCCATTIAATTCGAGAGCACATGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1079 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCCATGTTGACAAAAAGGCTGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATGATCTTGGAGTTGTTGGTACTAATTTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 AAGGGGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301 AACTCCGTATTTCTCTCACTTCCATAACCCCTGATTAATTTGGTGGGGAAAGCGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1435 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                        APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Rajen, Clare
APPLICANT: Bagleron, Clare
APPLICANT: Bagleron, Clare
APPLICANT: Bagleron, Clare
APPLICANT: Lasham, Amente
APPLICANT: Usear, Elizabeth
TITLE OF INVENTION: Omegositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c4
CURRENT APPLICATION NUMBER: US/10/137,036
CURRENT FILING DATE: 2002-04-30
PRIOR FILING DATE: 2000-11-28
PRIOR FILING DATE: 2000-11-28
PRIOR PLICATION NUMBER: U.S. No. US20030101478A1 09/598,401
PRIOR PLING DATE: 2000-06-20
PRIOR PLING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 638.2; DB 6;
Pred. No. 5.6e-185;
0; Mismatches 3;
RESULT 8
US-10-137-036-12
Sequence 12, Application US/10137036
Publication No. US20030101478A1
GENERAL INFORMATION
GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20.8%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Eucalyptus grandis
US-10-137-036-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 98.9
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                              2379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141 ACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCT 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1201 TGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCAGATTGGCTTCGGCATACCAAGTTC 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261 TTCTCATAAAAGGAAACAATAAGAAGCGGACTGTATGATGGCGCAAGTGGGAAGTTACAAGA 1320
                                                                                                                                                                                                                                                                                                                                                   TGATCGTTGCCAAATACCCATCGATGAAAGGGATCAACTTCGACCTGCCTCACGTGATTG 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG
                                                                                                                                                                                     CGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACCCCGCGATTCAACAAGATCTTTA
                                                                                                                                                                                                                                                                   CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACCATTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGCGTACTCCCTGTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGATTTGAAAGGTCGTGAAGGACCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGT
    AGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA
                                                                                  TGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGG
                                                                                                                                                                                                                                              ACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTGGAAACATACAAGG
                                                                                                                                                                                                                                                                                                                              GCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                              TGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGAGGAGGACACAGAAGGAGTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTGCATCATGTTGGCCCACAACCCAGGCGGAAAGAGAGGACACAGAAGGAGTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTGTTGTTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGT
                             AGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCGAAGTGGAAGTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCAGTAAATCACTTCGAACAAAA 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2021
                                        421
                                                                                                                     481
                                                                                                                                                                                                      541
                                                                                                                                                                                                                                              2201
                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                              2261
                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                            2321
                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1441
                                                                                2081
                                                                                                                                                                2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2860
```

a ઠે 요

δ

g

요 ઠ

Ś

8 6

品 公 品 谷

8 8 ò a ò

ij

420

```
AGAGITITICICICIATATICIGGITICACCGGITIGGAGTCAATGGCATGCGTGACGAATGT 1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATCGAACCTCCACCACATACCTCCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT 1614
                                                                                                                                                                                                                                               181 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCACGATCCAACCTTTCCTTAACAAG
                                                                              1319 AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC
                                                                                                                                                                             1495 ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA
                                                                                                                                                                                                                                                                                                                                                                                           421 AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTCGAGTCAATGGCATGCTGAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Race, Stephen
APPLICANT: Radjan
APPLICANT: Eaglaton, Clare
APPLICANT: Lasham, Annette
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
OURRENT CANTON: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE OF INVENTION: MOMBER: US/10/927,641
CURRENT FAILING DATE: 2004-08-27
PRIOR FILING DATE: 2001-06-20
PRIOR APPLICATION NUMBER: PET/NZ 01/00115
PRIOR PILING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
PRIOR APPLICATION NUMBER: U.S. No. 09/276,599
PRIOR APPLICATION NUMBER: U.S. No. 09/276,599
PRIOR PILING DATE: 1999-03-25
PRIOR PILING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SOFTWANE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 64
                                                     ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAATTTAACAAATAGCTCTTGTACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 12, Application US/10927641
; Publication No. US20050244968A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ) ORGANISM: Eucalyptus grandis
US-10-927-641-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1675 T 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
US-10-927-641-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                - [--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                       1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                               1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                셤
                                                                                                                                                           8 8
                                                                                                                                                                                                                                            ਨੇ
                                                                                                                                                                                                                                                                                                                                                       ò
                                                ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1079 CGAATTTTCTCTTTTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAGGCTGATTA 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1139 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGGTGACGATGGCCCCTCAGGGAAATT 1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1199 AAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCTCAGGGAAATT 180
                                                                                                                                         1614
                                                                                                                                                                                                                                       1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATATTGGTGTAGGGTCCAATATTTTGCGGAGGGTTGGTGAACCGCAAAGTTCCTATA 1554
                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1019 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTGTTGCTGCCATAACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                                                                                                                                                                                    TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 638.2; DB 9; Length 661;
Pred. No. 5.6e-185;
0; Mismatches 3; Indels 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: PROMATION:

GENERAL INFORMATION:

APPLICANT: Rice, Stephen

APPLICANT: Rice, Stephen

APPLICANT: Eagleton, Clastions and Methods for the

TITLE OF INVENTION: Modification of Gene Expression

TITLE OF INVENTION: Modification of Gene Expression

FILE REFERENCE: 11000.1036c5

CURRENT APPLICATION NUMBER: U.S. No. 10/291,447

PRIOR PILING DATE: 2002-11-06

PRIOR PELING DATE: 2002-11-08

PRIOR PELING DATE: 2002-11-08

PRIOR PELING DATE: 2002-04-30

PRIOR APPLICATION NUMBER: U.S. No. 09/724,624

PRIOR APPLICATION NUMBER: U.S. No. 09/724,624

PRIOR APPLICATION NUMBER: U.S. No. 09/724,624

PRIOR APPLICATION NUMBER: U.S. No. 09/724,624

PRIOR APPLICATION NUMBER: U.S. No. 09/724,624

PRIOR APPLICATION NUMBER: U.S. No. 09/724,624

PRIOR APPLICATION NUMBER: U.S. No. 09/724,624

PRIOR PILING DATE: 2000-06-20

PRIOR FILING DATE: 2000-06-22

PRIOR PILING DATE: 1999-00-30

PRIOR PILING DATE: 1999-03-25

NUMBER OF SEQ ID NOS: 129

SEQ ID NO 12

IENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIENGTH HOST

LIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 12, Application US/10702319A; Publication No. US20050026162A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 98.9%;
Matches 654; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                          1675 T 1675
                                                                                                                                                                                                                                                                                                                                                                                           661 T 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 9
US-10-702-319A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-702-319A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                 1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                         g
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                          ò
                                                       ઠે
                                                                                           원
                                                                                                                                                 ò
```

us-10-702-319a-113.rnpbm

```
CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acaadectroccaccaadecadrecrecacerroarercarcarecrececacea
                                                                                                                                           GAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u> arraccargaagarrerreagaceracaaggerrreaaggeercaegreere</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2526 GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGATGTTGGCCCACAACCCA
                                                                                                                                                                         GARACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGGCACACCTCTTTGCCATGCAA
                                                                                                                                                                                                           CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                                                                                                                                                                                                     140 cradecadrecricadricracearidarecreaaadadecearreaacredacerrer
                                                                                                                                                                                                                                                                      GAGATCATGGCCAAGGACGGGCCGGGCGTTCCTCTCCACGGGGGAAATCGCGGCACAG
                                                                                                                                                                                                                                                                                                    200 GABATCATGGCTAAAGCTGGCCCTGGTGCTTTGTCTGCACATCTGAGATAGCTTCTCAC
                                                                                                                                                                                                                                                                                                                                                          AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                   TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2047 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               440 CCTCTCTGTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       500 GCAATTCTTGATGGAGGAATTCCATTTAACAAGGCCTATGGGATGACTGCATTTGAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     candecadedarccaadarrcaadaagarcrrcaadaadedaargrcreaccadrcradc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGTCGGAGGCGCCACTGGGGCCGTGCTCAGCATGGTCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               680 gargirgeregeacrecaciceaccerraacaccarecrearereraaraccerreaare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2347 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2406 AAGCACGTCGGAGGCGACATGTTCGTCAGGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       800 GAGCATGTTGGTGGCGACATGTTTGTTAGTGTGCCCAAAGCAGATGCCGTTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGATATGCCATGACTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                              7;
                                                                              Length 1503;
                                  X62096
                                                                                                            Indels
                  , NAME/KEY: misc feature
, OTHER INFORMATION: AldOMT; GenBank accession number:
US-09-947-027-5
                                                                              Score 631; DB 3; L
Pred. No. 1.6e-182;
O; Mismatches 275;
                                                                              Query Match 20.6%;
Best Local Similarity 74.5%;
Matches 807; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                   1927
                                                                                                                                             1687
                                                                                                                                                                            8
                                                                                                                                                                                                                                                                      1807
                                                                                                                                                                                                                                                                                                                                     1867
                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2586
                                                                                                                                             ò
                                                                                                                                                                       g
                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 5, Application US/09947027

Patent No. US20020124281A1

GENERAL INFORMATION:

APPLICANT: Chiang, Vincent Lee C.

APPLICANT: Chiang, Vincent Lee C.

TITLE OF INVENTION: METHODS FOR SIMULTANEOUS CONTROL OF LIGNIN CONTENT AND COMPOSITIC

TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS

TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS

TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS

TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS

CURRENT APPLICATION NUMBER: US/09/947,027

CURRENT APPLICATION NUMBER: 60/230,086

PRIOR FILING DATE: 2000-09-05

NUMBER OF SEQ ID NOS: 14

SOOFWARE: Patentin version 3.0

SEQ ID NO 5

LENGTH: 1503
                                                                                                                              1138
                                                                                                                                                                                                                                                                                                                                                                                    1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGGGCCAACCCAGATTGCAAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAG 1258
                                                                                                                                                                                                                                                                                                                      ATCATCACCAGATCGGCCAGTAAGGGTAATATTTAACAAATAGCTCTTGTACCGGG 1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATATTGGTGTGGGTCCAATATTTTGCGGGGGGTTGGTGAACCGCAAAGTTCCTATA 1554
                                                                                                                            CGAATTTTCTCTTTTAGGTAACTAACCAATGATGCGCCATGTTGACAAAAAGGCTGATTA 1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 ATCATCACCAGATCGGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                  AACTCCGTATTTCTCTCACTTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                        GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                   GTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCGAACCTCCACCATACCTCACTTCAATCCCCACCATTTATCCGTTTTATTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCGAACCTCCACCACCATACCTCACTTCAATCCCCACCATTTATCTTATTTCCT
                                                                                CTGAGCCATTTAATTCGAGAGCACATGCCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                                                1019 CTGAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGT
                                    Gaps
                                    4
    Length 661;
                                3; Indels
   DB 10;
Score 638.2; DB 10
Pred. No. 5.6e-185;
0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA ORGANISM: aspen populus tremuloides
20.8%;
98.9%;
                  Best Local Similarity 98.9
Matches 654; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
US-09-947-027-5
                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                            1079
                                                                                                                                                                                           1139
                                                                                                                                                                                                                                                       1199
                                                                                                                                                                                                                                                                                                                                                                                   1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1675
                                                                                                                                                            61
                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                    1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
 Query Match
                                                                                                                                                   8 6 8
                                                                                                                                                                                                                                          8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                       8686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                        요
                                                                                                                           ò
                                                                 Š
```

1986

379

319

1806

199

ij

Gaps

1866

259

2046

439

2106

499

2166

559

2226

2286

619

619

2346

2405

739

2465

799

2585

979

2525

919

859

셤 δ 셤

셤 ð

```
RESULT 13
US-11-057-518-5
i Sequence 5, Application US/11057518
j Publication No. U32050166283A1
general information: U32050166283A1
general information: U32050166283A1
general information: U32050166283A1
j GENERAL INFORMATION: WETHORS FOR SIMULTANEOUS CONTROL OF LIGNIN CONTENT AND COMPOSITION:
j TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS
j TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS
gring Application NUMBER: US/11/057,518
j CURRENT FILING DATE: 2001-09-05
j PRIOR FILING DATE: 2001-09-05
j PRIOR FILING DATE: 2000-09-05
j RIOR APPLICATION NUMBER: 60/230,086
j PRIOR FILING DATE: 2000-09-05
j NUMBER OF SEQ ID NOS: 14
j SEQ ID NO 5
j SEQ ID NO 5
j LENGTH: 1503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2706 GECTICCAAGICATGIGGIGCGCTTICGGCACTCACGICATGGAGTICCTGAAGACCGCT 2765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCGGGAAAGAGAACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG 2705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1040 derdedaladaladadeceadaladalahrirdadecriraderaladedecrireda 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gegerreccaacaargdaaaaggrearegregagagrecogracreccagaac 2585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGATATGCCATGACTGGAGTGACGACATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2525
   2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          920 dedrindecadanaheddechaddararidridadidearrerrecedidaereeredae 979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1100 GGTTTTGAAGTAATGTGCTGTGCATTCAACACACATGTCATTGAATTCCGCAAGAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2586 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACACACCCA
                                                                                                                                                                                                                                                 ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                    GATGTCGGAGGGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                           2406 AAGCACGICGGAGGGGACATGTTCGTCGAGGGAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   800 GAGCATGTTGGTGGGGACATGTTTGTTAGTGTGCCCAAAGCAGATGCCGTTTTCATGAAG
                                                                                                                                                                                                                                                                                          2347 AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                      CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
2107 GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                             GCAATTCTTGATGGAGGATTCCATTTAACAAGGCCTATGGGATGACTGCATTTGAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: aspen populus tremuloides PEATURE: NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAA 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2766 TGA 2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2526
                                                                                                                                       2167
                                                                                                                                                                                                                                                                 2227
                                                                                                                                                                                                                                                                                                                                                                                     2287
                                                                         500
                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            $ g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                   ò
                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                 ଚ
                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-091-009-9

; Sequence 5. Application US/10091009

; Publication No. US2002013887011

; GENERAL INFORMATION:
; APPLICANT: Chiang, Vincent Lee C.
; APPLICANT: Chiang, Vincent Lee C.
; APPLICANT: Li, Laigeng
; TITLE OF INVENTION: METHODS FOR SIMULTANEOUS CONTROL OF LIGNIN CONTENT AND
; TITLE OF INVENTION: CELLULOSE CONTENT IN PLANTS
; FILE REPERENCE: 066040-9718 CELLULOSE CONTENT IN PLANTS
; FILE REPERENCE: 066040-9718 CONTENT IN PLANTS
; FILE NAPPLICATION NUMBER: 09/947,027
; PRIOR PELLING DATE: 2000-09-05
; PRIOR PELLING DATE: 2000-09-05
; RIOR APPLICATION NUMBER: 60/230,086
; PRIOR FILING DATE: 2000-09-05
; NUMBER OF SEQ ID NOS: 14
; SEQ ID NO 5
; LENGTH: 1503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1867 CTCCCGAACCCCGAAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1987 TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC 2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    crescendencerecerececentes recent de la 1806 con control de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 crescence de la 1806 cres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGATCATGGCCAAGGACGGGCCGGCGTTCCTCTCTCCACGGGGAAATCGCGGCACAG 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  260 CTCCCTACCAAAAACCCTGATGGGCCTGTCATGTTAGACGGTATCCTGGGCTTCTTGGGT 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320 AGCTACTCCATTCTTACCTGCTCTCTGAAAGATCTTCCTGATGGGAAGGTTGAGAGACTG 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140 CTAGCCAGTGCTTCAGTTCTACCAATGATCCTCAAAACAGCCATTGAACTGGACCTTCTT 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200 gaaarcargecraaagcresceresresricrisresearcreagaraserreres 259
                                                                         1040 GGTGGGAAAGAGGACCGAGAAAGAATTTGAGGGCTTAGCTAAGGGAGCTGGCTTCCAA 1099
                                                                                                                                          2706 GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT 2765
                                                                                                                                                                                                    1100 derrirgaadraardrecrerdecarreacacacardrerreaarrecaardaadece 1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2646 GGCGGGAAAGAGGAGGACACAGAAGGAGTTCGAGGCCCAAAAGGGGGCCGGATTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature; NGOME; GenBank accession number: X62096
US-10-091-009-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20.6%; Score 631; DB 6; Length 150 ilarity 74.5%; Pred. No. 1.6e-182; Conservative 0; Mismatches 275; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA ORGANISM: aspen populus tremuloides FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                 TGA 2768
                                                                                                                                                                                                                                                                                                                                        TAA 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Simi
Matches 807;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                 2766
                                                                                                                                                                                                                                                                                                                                              1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
```

쥠

ઠે

셤 ò g Š g ò g 셤

ò

```
cariegaacegarccaaegrirraacaaegrirricaacaaegegaregercarcacterace
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 20.0%;
Best Local Similarity 72.5%;
Matches 808; Conservative
                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Glycine max
                                                                         2766 TGA 2768
                                                                                                  1160 TAN 1162
                                                                                                                                                    US-10-424-599-20299
                                                                                                                                                                                                                                                                                                                                                  LENGTH: 2037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1073
                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                             g
                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                      ò
                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                     2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1926
                                                                                                                                                                                                                                                                                                                                                  2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2586 ACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACACAACCCA 2645
                                                                                                                                                                                           GAGATCATGGCCAAGGACGGGCCGGGCGTTCCTCTCCACGGGGGAAATCGCGGCACAG 1866
                                                                                                                                                                                                                                                                                               AGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGAT 2525
                                                                                                                                                                                                                                                             CTCCCTACCAAAAACCCTGATGCGCCTGTCATTAGACCGTATCCTGCGCCTCCTGGCT 319
                                                                                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                                                                                                             499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTACCATGAAGAAGATTCTTGAGACCTACAAAGGCTTTGAAGGCCTCACGTCCTTGGTG 679
                                                                                                              GAAACTCAGATGACTCCAACTCAGGTATCAGATGAAGAGCACACCTCTTTGCCATGCAA 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGTTGGTGGTGGGACTGGAGCCGTCGTTAACACCATCGTCTCTAAATACCCTTCAATC 739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         859
                                                                                                                                                                 CTAGCCAGTGCTTCAGTTCTACCAATGATCCTCAAAACAGCCATTGAACTCGACCTTCTT 199
                                                                                                                                                                                                                 GARATCATGGCTARAGCTGGCCCTGGTGCTTTCTTGTCCACATCTGAGATAGCTTCTCAC 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGGCATTAACTTCGATCTGCCCCACGTCATTGAGGATGCCCCATCTTATCCCGGAGTG 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCATGTTGGTGGCGACATGTTTGTTAGTGTGCCCCAAAGCAGATGCCGTTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                               TACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                  CCTCTCTCTCTCATGAACCAGGACAAGGTCCTCATGGAAAGCTGGTATTATTTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1687 GAGACCCAGATGACCCCCGACCCAAGTCTCGGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                        CTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                                                                                                                                                                                                                                                                                                                                  TATGGCCTCGCTCCTGTTTGTAAATTCTTGACCAAGAAACGAGGACGGTGTCTCTGTCAGC
                                                                                                                                                                                                                                                                                                                                                                                                     GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAATTCTTGATGGAGGAATTCCATTTAACAAGGCCTATGGGATGACTGCATTTGAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGTCGGAGGCGCCACTGGGGCCGTGCTCAGCATGATGCCAAATACCCATCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2406 AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acaaigcerreceaecaaigeaercerecaeerreargarerearicariserisecaecaeaaecee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGGCACGGATCCAAGATTCAACAAGGTCTTCAACAAGGGAATGTCTGACCACTCTACC
                                                              Gaps
                                                              1;
                                      1503;
                                    Score 631; DB 13; Length 1
Pred. No. 1.6e-182;
0; Mismatches 275; Indels
number:
 accession
OTHER INFORMATION: AldOMT; GenBank
                                    20.6%;
ilarity 74.5%;
Conservative
                                                Local Similarity
ses 807; Conserv
    ; CIRER INFO...
US-11-057-518-5
                                    Query Match
Best Local S
Matches 807
                                                                                                                                                                                                                                                                      260
                                                                                                                                        1747
                                                                                                                                                                                           1807
                                                                                                                                                                                                                                             1867
                                                                                                                                                                                                                                                                                               1927
                                                                                                                                                                                                                                                                                                                                                  1987
                                                                                                                                                                                                                                                                                                                                                                                                     2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2646
                                                                                                              80
                                                                                                                                                                 140
                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                        320
                                                                                                                                                                                                                                                                                                                                                                           380
                                                                                                                                                                                                                                                                                                                                                                                                                             440
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ठे है ठ
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                  요 등
                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음 장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                          g
                                                                                                                                        ò
                                                                                                                                                           셤
                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                         8 8 8
                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                        ઠે
                                                                                                                                                                                   ठ
```

```
Squence 20299, Application US/10424599
Fublication No. US20040031072A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: La Rosa Thomas J
APPLICANT: Lov Yihua
APPLICANT: AppliCANT: Acou Yihua
APPLICANT: AppliCANT: Acou Yihua
APPLICANT: AppliCANT: Acou Yihua
APPLICANT: AppliCANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Acou Yihua
APPLICANT: Aco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2226
                                                                                                                                                                                                      1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1132
1040 GGTGGGAAAGAGGACCGAGAAGGAATTTGAGGCTTTAGCTAAGGGAGCTGGCTTCCAA 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACGGCTTAGCGCCCGGTGTGCTAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1013 GCAGTCCTTGAAGGGGGTATTCCATTTAACAAAGCATATGGAATGACAGCCTTTGAATAC
                                                                                                     2706 GGCTTCCAAGTCATGTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                                                                                                                                                                                      1100 GGTTTTGAAGTAATGTGCTGTGCATTCAACACACACATGTCTTGAATTCCGCAAGAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1687 GAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      593 GAGACTCAGATTACTCCAACCCATGTATCTGATGAAGAGGCAAACCTTTTCGCCATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  crasccastricaciaciccerarssircicaaarcascrerrsascritsarcrerrs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCCACGGGGGAAATCGCGGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             713 ganaticatnoccanoccroscicrosrorrencerrireceresadarirocrieda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCCGACCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        773 CTCCCAACACACACACTGATGCACCCGTTATGTTGGACCGTATATTGCGCTTTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    833 TGCTACAATATCCTCTCTTTTTTTTCTCTCCCACTCTCCCTCATGGCAAGGTTGAGAGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2047 GCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGGCACCGGACTTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATGGTCTCGCCCCTGTTGCTAAGTACTTGGTCAGGAACGAAGATGGTGTCTCCATTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2037;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; OTHER INFORMATION: Clone ID: PAT_MRT3847_118334C.1
US-10-424-599-20299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 613.4; DB 8;
Pred. No. 5.4e-177;
0; Mismatches 306;
```

```
2761 CCGCTTGA 2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGCCTAA 1149
                                                                                                                                                                                                                                                                                                                                                                        2461
                                                                                                                                                                                                                                                                                                                                                                                                                                               2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1142
                                                                                                                                                                                                                                                                                   662
                                                                                                                                                                                                                                                                                                                                      2401
                                                                                                                                                                                                                                                                  2282
                                                                                                                                                                                                                                                                                                                    722
                                                                                                                                                                                                                                                                                                                                                       782
                                                                                                                                                                                            2162
                                                                                                                                                                                                             542
                                                                                                                                                                                                                               2222
                                                                                                                                                                                                                                                602
                                                                                                                                                                                                                                                                                                    2342
               1862
                                242
                                                 1922
                                                                                    1982
                                                                                                                       2042
                                                                                                                                                         2102
                                                                                                                                                                          482
                                                                  302
                                                                                                     362
                                                                                                                                       422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                  දු පු
                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                     B & B & B &
                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                               8 8 8
                                                                                                 8 & 8
         8 8
                                               8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1805 TCGAGATCATGGCCAAG---GACGGGCCGGGCGGTTCCTCTCCACGGGGAAATCGCGG 1861
                                                                                                                                                                                                                                                  2705
                                                                                                                                                                                                              2586 ACGAGCCTAGCGACCAAGAATGTGATCCACTGGACTGCATCATGTTGGCCCACAACCCA 2645
                                                                                                                                                                                                                                                            1613 derricceaericcienecrerecrircaaraccracericaieearircicaaaaeerr 1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                          2525
                                                                                                                                                                           GCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGAC 2585
                                                                                                                                                                                       2346
                                                                    2405
                                                                                      1312
                                                                                                        2465
                                                                                                                         1372
                                                                                                                                                        1685 CCGAGACCCCAGATGACCCCCAAGTCTCGGACGACGAGGGAACCTTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTGGCGAGCGCCTCCGTGCTCCCTAAAGGCCGGCCATCGAGATCGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCGGGAAAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAG
                                                                                                                                                                                                                                                                                     GGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCT
                                 GATGTCGGAGGCGGCACTGGGGCCGTGCTCAGGATGATCGTTGCCAAATACCCATCAATG
                                              AAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTC
                                                                                AAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAG
                                                                                                               TGGATATGCCATGACTGGAGTGACGACCATTGCGCGGAAGTTCCTCAAGAACTGCTACGAT
                                                                                                                                                                                                                          Gape
ATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTC
               ATTACATGAAGAAATTCTTGAGACCTACAGGCTTTGAGGGACTTAAATCCCTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20.0%; Score 613; DB 8; Length 14
.larity 73.9%; Pred. No. 5.8e-177;
Conservative 0; Mismatches 280; Indels
                                                                                                                                                                                                                                                                                                                                                                                Sequence 11, Application US/10469993
; Sequence 11, Application US/10469993
; Publication No. US20040078847A1
; GENERAL INFORMATION:
    APPLICANT: Paldi, Nitzan
; TITLE OF INVENTION: METHOD OF ENHANCING ENTOMOPHILOUS
; FILE REFERENCE: 26678
; CURRENT APPLICATION NUMBER: US/10/469,993
; CURRENT FILING DATE: 2003-09-16
; NUMBER OF SEQ ID NOS: 22
; SOFTWARE: Patentin version 3.1
; SEQ ID NO 11
                                                                                                                                                                                                                                                                                                                         rearcrecrereresensarerrearerrerr 2800
                                                                                                                                                                                                                                                                                                                                         raagricrirgecgregarrcararcagriccar 1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Clarkia breweri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 804; Conserv
                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
US-10-469-993-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-469-993-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        122
                                                                                                                                                                                                                                                                                        2706
                                                                                                                                                                                                                                                                                                                            2766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                        2347
                                                                                                                                                                                                                                                      2646
                    1133
                                                                                          1253
                                                                                                           2406
                                                                                                                            1313
                                                                                                                                              2466
                                                                                                                                                              1373
                                                                                                                                                                                 2526
                                                                                                                                                                                                  1433
                                      2287
   2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                            8 & 8
                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                        δ
                                                  6 B 6 B 6 B 6 B
                  Б
                                      8
```

```
2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Treaggerinceaagicargrecigegerincegeacrecacgreatggagirecigaaga 2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2341
                                                                                                                                                                                                                                                                                                                                         2221
                                                                                                                                                                                                                       2101
                                                                                                                                                                                                                                                                                2161
                                                                                                                                                                                                                                                                                                                                                                                                CCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCG 2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        961
                                                                                                     TOCCOCOAGCTACTCCGTGCTCCCTCCGCGACCTCCCCCGATGCCAAGGTCGAGC 1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                           421
                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGTGGATATGCCATGACTGGAGGACGACATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2521 ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGACACGAGCCTAGGGACCAGAATGTGATCGACTGGACTGCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2641 ACCCAGGGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCCACCCTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           grgrcaaggaggagggagggaggrgrrcgrcagggrrcgaaagggagargccarttrca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  902 Argcrigcachricccaaccanggcaaggircanghrigchgaaracancchricchicaric
                                                                                                                                                                                                                                                                                                  AGTATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACT
                                                                                                                                                                                                                                                                                                                                                                                                                 regregareresececescresesecesceseses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u> GOCTCTACGGCTTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAAAACGAGGACGGGGTCTCCA</u>
                                                                                                                                                                            trocretritringercaccaccaccaccacciterraccacciterinacrica
                                                                                                                                                                                                                                                                                <u>AAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCG</u>
                                                                                                                                                                                                                                                                                                                                                                   ATTACCATGGAACAGACCACAGATTCAACAAGGTGTTCAACAAGGGAATGTCCAGCAACT
                                                                                                                                                                                                                       TCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGA
cacagerecedancecagancecagacacecarecarecreacegacegarerrec
                                                                      Search completed: November 1, 2006, 14:26:05
Job time : 3930.54 secs
```

```
Sequence 107, App
Sequence 7471, Ap
Sequence 4777, App
Sequence 22559, A
Sequence 2145, Ap
Sequence 1465, Ap
Sequence 78, Appl
Sequence 78, Appl
Sequence 78, Appl
Sequence 5836, Appl
Sequence 5836, Appl
Sequence 5836, Appl
Sequence 5836, Appl
Sequence 5836, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1, Appli
5315, Ap
14, Appl
106, App
7470, Ap
17322, A
80, Appl
20948, A
13681, A
                                                                                                                (without alignments)
8946.617 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /EMC_Celerra_SIDS3/ptodata/2/pubpna/US09_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US06_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US06_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US08_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US10_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/ptodata/2/pubpna/US11_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                ; Search time 665.818 Seconds
                                                                                                                                                                                                     1 agcaccatcagcaaaaaata........acttcgaacaaaaaaaaa 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-11-216-545-7471

US-11-105-3559-2559

US-10-953-349-3948

US-11-174-307B-2145

US-11-1056-355B-36626

US-11-205-856-78

US-11-205-856-78

US-11-056-355B-5836

US-10-63-55B-5836

US-10-63-55B-5836

US-10-63-55B-5836

US-11-056-355B-5836

US-11-397-533-106

US-11-397-533-106

US-11-292-078-17322

US-11-292-078-17322

US-11-292-078-17322

US-11-292-078-17322

US-11-292-078-17322

US-11-292-078-17322

US-11-292-078-17322

US-11-292-078-17322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -10-953-349-13681
-11-056-355B-26750
                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                      2461376 seqs, 970166171 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Published Applications NA New:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                November 1, 2006, 11:48:44
                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                 OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                   Gapop 10.0 , Gapext 1.0
                                                                                                                                                              US-10-702-319A-113
3070
                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1425
1522
1227
1219
1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              407
1024
608
306
1366
1387
1228
1302
                                                                                                                                                                                                                                      IDENTITY NUC
              Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1429.6
610.6
566.4
566.4
564.8
564.8
564.8
437.6
419.6
                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           404
398.2
391.4
391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              388
345.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 306
294.2
                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                    .
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Result
                                                                                                  Run
```

90878, A 94634, A	127, App 13, Appl	86015, A	4089, Ap	4403, Ap	19612, A		104, App	191, App	16882, A	17408, A	38667, A	99290, A	110529,	58, Appl	2065, Ap	103360,	114599,	9614, Ap	50574, A	
Sequence	Sequence	Sequence	Sequence	Sequence	Seguence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	
US-11-056-355B-90878 US-11-056-355B-94634	US-11-397-533-127 US-10-526-411-13	US-11-056-355B-86015	US-10-449-902-4089	US-10-449-902-4403	US-10-449-902-19612	US-10-449-902-21780	US-11-218-305-104	US-11-397-533-191	US-10-449-902-16882	US-11-292-078-17408	US-11-056-355B-38667	US-11-056-355B-99290	US-11-056-355B-110529	US-11-233-483A-58	US-11-174-307B-2065	US-11-056-355B-103360	US-11-056-355B-114599	US-10-953-349-9614	US-11-056-355B-50574	
თ თ I	6 7	6	9	9	9	9	0	7	9	7	σ	σ	6	0	δ	6	σ	9	6	
1146	661 1146	1146	1399	1399	1233	1365	814	1036	1308	607	1371	1371	1371	2932	1092	1356	1356	1411	1384	
8 8	8.3 1.3	8.1	8.1	8.1	7.6	7.6	7.5	7.5	7.5	7.5	7.4	7.3	7.3	6.7	6.7	6.7	6.7	6.7	9.9	
256.6	254 250.2	250.2	250	250	233	232.4	231.4	230.2	229.2	228.8	228.6	223.8	223.8	206.8	205.2	204.2	204.2	204.2	202.6	
24	2 7 2 7	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
										υ				υ						

ALIGNMENTS

```
ACGAGGCGAACCTCTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAA 1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1661 AGGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG 1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 AGGAGAGAATGGGTTCGACCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1630;
                                                                                                                                            | FUDICABLON NO. USZUUBOIBSB95A1
| GENERAL INFORMATION:
| APPLICANT: Bloksberg, Leonard N. |
| APPLICANT: Bloksberg, Leonard N. |
| APPLICANT: Bloksberg, Leonard N. |
| TITLE OF INVENTION: Materials and Methods for the |
| TITLE OF INVENTION: Modification of Plant Lignin Content |
| FILE REFERENCE: 11000.1003c6 |
| CURRENT APPLICATION NUMBER: US/11/397,533 |
| CURRENT PILING DATE: 2006-04-03 |
| PRIOR APPLICATION NUMBER: US 08/975,316 |
| PRIOR PILING DATE: 1997-11-21 |
| PRIOR PELING DATE: 1996-10-1 |
| PRIOR PILING DATE: 1998-10-09 |
| PRIOR PILING DATE: 1998-10-09 |
| PRIOR PILING DATE: 1998-10-09 |
| PRIOR PILING DATE: 1999-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR PILING DATE: 2000-07-12 |
| PRIOR 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1429.6;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1601 CCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAG
RESULT 1
US-11-397-533-107
Sequence 107, Application US/11397533
; Publication No. US20060183895A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 99.0%;
Matches 1449; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: Eucalyptus grandis
US-11-397-533-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

1660

AAGGAAACAATA AAGGAAACAATA AAGGAAACAATA TTATGTCTATAA TTATGTCTATAA GCGTATATGGAT IIIIIIIIIIIIIIIIIIIIIIIIIIIII	APPLICANT: MONSANTO Technology, LLC APPLICANT: MCLaird, Paul L APPLICANT: Too, Nengbing APPLICANT: Too, Nengbing APPLICANT: Wu, Kunsheng TITLE OF INVENTION: Single Nucleotide Polymorphic Markers TITLE OF INVENTION: Sovbeans. FILE REFERENCE: 38-21 (53659)8 CURRENT PILING DATE: 2005-08-31 PRIOR PELLORATION NUMBER: US 60/606,062 PRIOR FILING DATE: 2004-08-31 PRIOR FILING DATE: 2004-08-31 PRIOR FILING DATE: 2004-08-31 NUMBER: PatentIn version 3.2 SOFTWARE: PatentIn version 3.2 SOFTWARE: Patentin version 3.2 TYPE: DNA TYPE: DNA TYPE: DNA TYPE: DNA TYPE: DNA	Query Match	Qy 1985 TCTACGGCCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGGCGCTCCCATCG Db 373 TCTATGGTCTCGCCCCGTTGCTAAGTACTGGTCAAGACCGAAGATGGTGTCTCCCATTG Qy 2045 CCGCACTCAACTTGATGAACGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG Db 433 CTGCTCTTAACCTCATGAACCAGGACAAAGTCCTCATGGAAAGCTGGTACTATTTGAAAG
121 1781 181 1841 241 1901 301 1961 1961 2021			2740 ACGTCAT 2740 ACGTCAT 1141 ACGTCAT 2800 TGGATTT 1201 TGGATTT

Genotyping

1804

211

151

2

7;

Indels

Length 1266;

```
TCGAGATCATGGCCAAGGACGGCCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGCAC 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1865 AGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGG 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGC 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1285 TCGATGTCGGAGGCGCACTCGGCCGTGCTCAGCATGGTTGCCAAATACCCATCAA 2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGTCTTACTCCGTCTTAACCTCCTCCAACCGTAAACTTTCCGGTGATGGCGTTGAACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGCATGTTGGAGGAGATATGTTGTAAGTGTCCCTAAAGGTGATGCCATATTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1685 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                     cegagacacaarraacrccegrecaagrcacceaceaceaegcrecccrcrrceccarec
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1745 AGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152 Aactagccagrgcrrccgrrcrrcgarggcrrraaaarccgccrragagcrrgaccrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     212 TTGAGATTATGGCCAAGAATGGTTCTCCCATGTCTCCTACC----GAGATCGCTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  386 TrraceGecrreGreceGrrigeAaGrarrigaCeAaGAACGAAGAAGATGGTTTCCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               crecretrrererrandaaccaacaacaacaracrecrearecaaaccrecrearecarreaacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2165 ATCATGGCACCGGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               566 Accacegeacreacceracarreacaacarecrerraacaarecaarerraacarreca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCATTACTATGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  626 CAATCACCATGAAGAAGATTCTTGAGACCTATAAGGGTTTTGAAGGATTGACTTCTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rrgargradocardectacracacreaaaargarrereceaagraceraare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2345 TGAAAGGGATCAACTTCGACCGCCC-CAACGGATTGAAGACGCCCCACCCCTTCCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2464 AGIGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG
                                                                                                                                                                                                                     Ceres CDNA ID no. 23371995
                                                                                                                                                                                                                                                                            Ouery Match
18.4%; Score 566.4; DB 9;
Best Local Similarity 70.6%; Pred. No. 1.2e-153;
Matches 786; Conservative 0; Mismatches 321;
                                                           no. 12338255
                                                                                                                                         no. 33790
                                 LOCATION: (1)...(1266)
OTHER INFORMATION: Ceres CDNA ID FRATURE:
FRATURE: misc_feature
LOCATION: (1)...(1266)
OTHER INFORMATION: Ceres CLONE I
                                                                                                                                                                                                ; LOCATION: (1). T(1266); OTHER INFORMATION: Also known as US-11-174-3078-477
                   misc_feature
                                                                                                                                                        FEATURE:
NAME/KEY: misc feature
FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2404
                                                                                                                                                                                                                                                                                                                                                                                                         92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 998
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: ALEXANDROV, Nickolai
APPLICANT: ALEXANDROV, Nickolai
APPLICANT: BROVER, Vyacheslav
TITLE OF INVENTION: UNCLEDITIDE SEQUENCES AND POLYPEPTIDES ENCODED THEREBY
TITLE OF INVENTION: USEFUL FOR MODIFYING PLANT CHARACTERISTICS
TILE REFERENCE: 2750-1601PUS2
CURRENT APPLICATION NUMBER: US/11/174,307B
CURRENT PILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
PRIOR FILING DATE: 2004-06-30
                                                                                                                                                                                                                                                                                                                                              2403
                                                                                                                                                                                                                                                                                                                                                                                                                              2463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTC 2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCG 2763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGTTTCCGAGTCCTGTGCTGTGTGTTCAATACCTACGTCATGGAGTTTCTCAAAAAGG 1152
                                                                                                                                                                                 CCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG 2284
                                                                                                                                                                                                                                                               TCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAA 2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTGGATATGCCATGACTGGAGTGACGACCATTGCGGAAGTTCCTCAAGAACTGCTACG 2523
                                                                                                                                                                                                                                                                                                      732
                                                                                                                                                                                                                                                                                                                                                                                    733 TCAAGGGCATTAATTTTGATTTGCCCCATGTCATTGGAGATGCCCCATCTTATCCAGGAG 792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   913 AGGCACTTCCAGACAATGGGAAGGTAATTGTGGCAGAATGCATTCTTCCAGTGGCTCCAG 972
                                                                                                                          ACCATGGAACAGATCCAAGGTTTAACAAGGTTTTCAACAAGGGGATGGCTGATCACTCCA
                                                                                                                                                                                                                                                                                             TTGATGTTGGTGGAGGAACTGGAGCCGTAGTCGATGATTGTCTCAAAGTATCCCACTA
                                              TGGAGCATGTCGGTGGAGATATGTTGTCAGTGTTCCAGAAGCTGATGCTATTTTTATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                                                                                                              TGAAAGGGATCAACTTCGA-CCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACC
                                                                                                 2165 ATCATGGCACCGGCGCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTGATCTGCTCCTCTGTGTGTGTTCATGGTTCTTGGATTTGA 2808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1153 TTTAAGTTCTTTGGCGTGGATTCATAAGTTGCATTTGAGTTTTGA 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Sequence 477, Application US/11174307B
; Publication No. US20060143729A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-11-174-307B-477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2764
                   2105
                                                                                                                                                                               2225
                                                                                                                                                                                                                                                               2285
                                                                                                                                                                                                                                                                                                      673
                                                                                                                                                                                                                                                                                                                                              2345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1093
                                                         493
                                                                                                                                         553
                                                                                                                                                                                                                       613
                                                                                                                                                                                                                                                                                                                                                                                                                              2404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2584
                                                                                                                                                                                                                                                                                                                             8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                g
                                                                                                                        음 참
                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                               ઠે
```

2044

445

385

2104

505

2164

565

2284

685

2224

625

2523

925

2463

865

```
Sequence 3948, Application US/10953349
; Publication No. US20060107345A1
; GENERAL INFORMATION:
; APPLICANT: ALEXANDROW, Nickolai et al.
; TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
; TITLE OF INVENTION: ENCONDED THERBY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2704 AGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCGTGAAGACCG 2763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2524 ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAG 2583
AGCICCCGACCCAGAACCCCGAGGCACCCGICAIGCICGACCGGAICTICCGGCIGCIGG 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2644 CAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGGTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2584 ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGGGCCCACAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 986 ACTCAAGCCTCTCAACCAACAAGTAGTCCATGTCGATTGCATTATGTTGGCTCACAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2345 TGAAAGGGATCAACTTCGACCCC-CAACGGATTGAAGACGCCCCCACCCTTCCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TIAAAGGCATCAACTITGAICTCCCACATGATGAAGATGCTCCTTCTCATCCTGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              626 caarcaccardaagaagarrcrrgagaccraraagggrrrrgaaggarrgacrrcrrgg
                                                                                                                                                                                                                                                                                                                                                                                                                       TCGATGTCGGAGGGGACTGGGGCGTCAGCATGATCGTTGCCAAATACCCATCAA
                                                                                                                                                                                                                                                                                                                   CCATTACTATGAAGAAAAAACATACAAAGAGTTTCGAGGCCTCGAGAACGTGG
                                                                                      cgrcriaciticcircriaaccriderceaaccgraaactrreedgrigarggegirdaacgda
                                                                                                                                              386 İTTACGGGCTTGGTCCGGTTTGCAAGTATTTGACCAAGAACGAAGAAGGGTGTTTCCATTG
                                                                                                                                                                               CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG
                                                                                                                                                                                                  ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                                 AṅĠĊaAṅrCirdandandagahrccarrcaagacrrangaangagagcgcgrrcaagr
                                                                                                                                                                                                                                                                                                   2165 ATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATGACTCCA
                                                           CCAGCTACTCCGTGCTCCACCTCCCCCCACCTCCCCGATGGCAAGGTCGAGCGGC
                                                                                                                      TCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG
                    CTTGATCTGCTCTGTGGTGATGTTCATGGTT 2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rciadadacadacadicirccididadadicati 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 5
US-10-953-349-3948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 908
                                                                                                                                                                                                                                                                                                                                                                         2225
                                                                                                                                                                                                                                                                                                                                                                                                                                   2285
                                                                       1925 (
                                                                                                                                 1985
                                                                                                                                                                                          2045
                                                                                                                                                                                                                                                    2105
                                                                                                   326
                                                                                                                                                                                                                        446
                                                                                                                                                                                                                                                                                  206
              1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                               ∂
                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                             Ś
                                                                B 6
                                                                                                                               ò
                                                                                                                                                     ద
                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCGAGATCATGGCCAAGGACGGGCGGGGGTTCCTCTCCACGGGGAAATCGCGGCCAC 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1745 Agergaccasaccocorrectorarectocorranaescococorrecasorrecases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aaciadecadrderietetetetetetetaaaareedeerradagerrdaeere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151
                                                                                                                                                                                                                                      Aggicaticaaagirgicigigaaggirirggggraraagccraargagraagga 1165
                                                                                         2643
                                                                                                        CAGGCGGGAAAAGAGAACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGGCCGGATTTC 2703
                                                                                                                                                                               AGGGCITICCAAGICATGIGCTGCGCITITCGGCACTCACGICATGGAGTICCTGAAGACCG 2763
                                                        AGTCACTTCCAGAGGATGGAAAAGTGATATTAGCAGAGTGTATACTTCCAGAGACACCCAG 985
                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: INFORMATION:
APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REPERENCE: 2750-1590PUS2
CURRENT APPLICATION WMBER: US/11/056,355B
CURRENT PILING DATE: 2005-02-14
PRIOR APPLICATION WUMBER: 60/544,190
PRIOR FILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 22559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1685 CCGAGACCCAGATGACCCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                         ACACGAGCCTAGCGACCAAGAATGTGATCCACATGGACTGCATCATGTTGGCCCACAACC
                               ATGCGCTTCCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; LOCATION: (1). (1266)
; OTHER INFORMATION: Ortholog of Ceres SEQ ID NO 13598513
; OTHER INFORMATION: as cited in SEQ ID NO 64102
US-11-056-3558-22559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of Ceres SEQ ID NO 14304148 in SEQ ID NO 57313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
18.4%; Score 566.4; DB 9;
Best Local Similarity 70.6%; Pred. No. 1.2e-153;
Matches 786; Conservative 0; Mismatches 321;
                                                                                                                                                                                                                                                                            CTTGATCTGCTCTCTGTGGTGATGTTCATGGTT 2797
                                                                                                                                                                                                                                                                                                     rcraaaacaaacaarcrrcrardaagardarr 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   no. 12338255
                                                                                                                                                                                                                                                                                                                                                                                 ; sequence 22559, Application US/11056355B ; Publication No. US20060150283A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: (1). (1266)
OTHER INFORMATION: Ceres Seq. ID
PEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: (1)...(1266)
OTHER INFORMATION: Ortholog
OTHER INFORMATION: as cited
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                         .11-056-355B-22559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                     926
                                                                                                   2584
                                                                                                                                                            2644
                                                                                                                                                                                          1046
                                                                                                                                                                                                                      2704
                                                                                                                                                                                                                                                    1106
                                                                                                                                                                                                                                                                                  2764
                                                                                                                                 986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          д
З
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                    8 6 8 6
                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                            요 상
                                                                                                                                                                                                                                                                                                          셤
                                                                  셤
```

2643

2463

865

2224

2104

2044

```
968 AGTCACTTCCAGAGGATGGAAAAGTGATATTAGCAGAGTGTATACTTCCAGAGACACCAG 1027
                                                                                           1028 ACTCAAGCCTCTCAACCAAACAAGTAGTCCATGTCGATTAGCATTATGTTGGCTCACAATC 1087
                                                                                                                                          2644 CAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGATTTC 2703
                                                                                                                                                                                       1088 ccggaggcaaagaacgaaccgagaaagagrrrgaggcarragccaaagcarcaggcrrca 1147
                                                                                                                                                                                                                                                                                1148 AGGGCATCAAAGTTGTCTGCGACGCTTTTGGTGTTAACCTTATTGAGTTACTCAAGAAGC 1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1745 AGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCC 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1805 TCGAGATCATGGCCAAGGACGGCCCGGCGCGTTCCTCCCACGGGGAAATCGCGGCAC 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1865 AGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGG 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        254 Treasatratesceasaaraserrerecearsrerecerace-----Gasareserrera 307
                                                                                                                                                                                                                                         2704 AGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1685 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134 cagadadadatraacreegreeaagreaceaceaceaceaceaecreecereree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          194 aactagccagrectrocerroricoardecrrraaaarccectragagcrrdactro
                                                 2584 ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1394;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              no. 23370749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
18.4%; Score 564.8; DB 9;
Best Local Similarity 70.5%; Pred. No. 3.6e-153;
Matches 785; Conservative 0; Mismatches 322;
                                                                                                                                                                                                                                                                                                                                    2764 CTTGATCTGCTCTGTGGTGATGTTCATGGTT 2797
                                                                                                                                                                                                                                                                                                                                                                                    1208 TCTAAAACAACAATGTTCCTATGAAGATGATT 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ceres CDNA 1D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     253173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      no. 13491017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ő.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
US-11-174-307B-2145
US-11-174-307B-3175, Application US/11174307B
Publication No. US20060143729A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (1). (1394)
OTHER INFORMATION: Also known as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCATION: (1). (1394)
OTHER INFORMATION: Ceres CDNA ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: (1). (1394)
OTHER INFORMATION: Ceres CLONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Arabidopsis thaliana
FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: ALEXANDROV, Nickolai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                         유
                                                                                                                                                                                  g
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                               ઠે
                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2524 ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAG 2583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2464 AGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG 2523
                                                                                                                                                                                                                                                                                                                                                                1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCTGGCGAGCGCCTCCGGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCC 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGAGATCATGGCCAAGGACGGGCCGGGCGCGTTCCTCTCCACGGGGGAAATCGCGGCAC 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1865 AGCTCCCGACCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGG 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGC 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG 2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGATGTCGGAGGCGGCACTGGGGCCGTGCTCACATGATCGTTGCCAAATACCCATCAA 2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAAGGGATCAACTTCGACCGCCC-CAACGGATTGAAGACGCCCCCACCCTTCCTGGTG 2403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA 2463
                                                                                                                                                                                                                                                                                                                                                                                                TTGAGCATGTTGGAGGAGATATGTTTGTAAGTGTCCCTAAAGGTGATGCCATATTCATGA 907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTICCGACCAAAAATCCTGAAGCTCCGGTCATGCTCGACCGTATCCTCCGTCTTCTTA 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     608 ACCACGGGACTGACCTAGATTCAACAAGGTCTTTAACAATGGAATGTCTAACCATTCCA 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGATGTTGGTGGCGATTGCTGCTACACTCAAATGATTGTCTCCAAGTACCCTAATC 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          788 TTAAAGGCATCAACTTTGATCTCCCACATGTCATCGAAGATGCTCCTTCTCATCCTGGTA 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTCTTACTCCGTCTTAACCTGCTCCAACCGTAAACTTTCCGGTGATGGCGTTGAACGGA 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               428 TITACGGGCTTGGTCCGGTTTGCAAGTATTTGACCAAGAACGAAGATGGTGTTTCCATTG 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGAGATTATGGCCAAGAATGGTTCTCCATGTCTCCTACC----GAGATCGCTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         548 ATGCAATTCTTGATGGTGGGATTCCATTCAACAAGGCTTATGGAATGAGCGCTTCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTGGATATGTCATGACTGGAGTGACGAACATTGCGTGAATTCTTGAAGAACTGCTACG
                                                                                                                                                                                                                                                                                                                                                                1685 CCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGACGACGAGCCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCTCTTTGTCTTATGAACCAAGACAAGGTTCTCATGGAAAGCTGGTACCATTTGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCATGGCACCGACCGGGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caarcaccargaagaagarrcrrgagaccraraagggrrrrgaaggarrgacrrcrrrgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                 7;
                                                                                                                                                                                                                                                               Length 1394;
                                                                                                                                                                                                                                                                                                                 0; Mismatches 322; Indels
                                                                                                                                                                                                                                                                 DB 6;
                                                                                                                                                                                                                                                               Score 564.8; DB 6;
Pred. No. 3.6e-153;
  FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: PATENTIN VERSION 3.3
SEQ ID NO 3948
                                                                                                                                                                      TYPE: DNA
; ORGANISM: Arabidopsis thaliana
US-10-953-349-3948
                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 70.5%;
Matches 785; Conservative
                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        194
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2285
                                                                                                                                                                                                                                                                                                                                                                                                               134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       908
```

윰

원 ઠે ď ð g ò g ò 8 6

õ

8 & 8

8 6 8 6

8 8 8

. Q

Š

6 8

g

193

```
2584 ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAACC 2643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1028 ACTCAAGCCTCTCAACCAAACAAGTAGTCCATGTCGATTAGATTAGGTTGGCTCACAAATC 1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGCGGGAAAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTC 2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGGCTICCAAGICAIGIGCTGCGGCTTICGGCACTCACGICAIGGAGTICCTGAAGACCG 2763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1148 AGGGCATCAAAGTTGTCTGCGACGCTTTTGGTGTTAACCTTATTGAGTTACTCAAGAAGC 1207
                                                                                                                                                                                                                                                                                                                                                                                  2463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAG 2583
                                                                                                                                                                                                                                                                                            TCGATGTCGGAGGCGGCACTGGCGCGTGCTCAGCATGGTCGTTGCCAAATACCCATCAA 2344
                                                                                                                                                                                                                                                                                                                                       TGAAAGGGATCAACTTCGACCGCCC-CAACGGATTGAAGACGCCCCACCCCTTCCTGGTG 2403
                                                                            2044
                                                                                                                                                                2164
                                                                                                                                                                                                          2224
                                                                                                                                                                                                                                                   CCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG 2284
                                                                                                                      2104
                                                                                                                                                                                                                                                                                                                                                                                                                                        847
                                                                                                                                                                                                                                                                                                                                                                                               CCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGGATGGCAAGGTCGAGCGGC 1984
                                                                                                                                                                                                                              667
                                                                                                  487
                                                                                                                                            547
                                                                                                                                                                                     607
                                                                                                                                                                                                                                                                trgarictricardachtricardarachtraaahteatreitetaaghachtaete 787
                                                      427
tradakiscaticaacitrisatereeeacatsiteaasaasaasaasaasaasaasaa
                                                                                                                                                                                                                                                                                                                                                                                 TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                            AGTGGATATGCCATGACTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG
                                                                            TCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGAGGGTCTCCATCG
                                                                                               triacidectrocrocogirrocaagiarrioaccaagaacdaagarderorrocaird
                                                                                                                      CCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAG
                                                                                                                                           crecrcittarchaigaaccaacacaagcitcicaigaaagciggiaccattigaag
                                                                                                                                                               ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACGGCGTTCGAGT
                                                                                                                                                                                                           ATCATGGCACCGACCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                      2764 CTTGATCTGCTCTGTGGTGATGTTCATGGTT 2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rcraaaaacaardrrccrardaagargarr 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2704
                                                                                                                                                                                                                                                                                                                         728
                                                                                                                                                                                                                                                                                                                                                                                                              848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2524
                                                                                                                                                                                                                                                                                                    2285
                                                                                                                                                                                                                                                                                                                                               2345
                                                                                                                                                                                                                                                                                                                                                                  788
                                                                                                                                                                                                                                                                                                                                                                                        2404
                                                                                                                                                                                                                                                                                                                                                                                                                                  2464
                                                                                                                                                                                                                                                                                                                                                                                                                                                       908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 968
                                                             368
                                                                                  1985
                                                                                                                            2045
                                                                                                                                                                       2105
                                                                                                                                                                                                                2165
                                                                                                                                                                                                                                     608
                                                                                                                                                                                                                                                         2225
                   308
                                                                                                      428
                                                                                                                                                  488
                                                                                                                                                                                            548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                   S S
                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                     8 & 8
                                                                                                 g
                                                                                                                           8 8 8
                                                            셤
                                                                                 õ
                                         Š
```

```
2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCGATGTCGGAGGCGCGCTCGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAA 2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1865 AGCTCCCGACCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGGATCTTCCGGCTGCTGG 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTGGGGAGGGGCTCCGTGCTCCCTAAAGGCGGCGATGGAATGGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGAGATCATGGCCAAGGACGGCCGGCGCGTTCCTCCTCCACGGGGAAATCGCGGCAC 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             194 Aactadccadrdcrrccdrrcrarccanddcrrraaarccdccrradadcrrdachrc 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2165 ATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2045 ccgcacrccaacrrcargaaccaagacaaaarccrcargaaagcrggrarracrrcaaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2105 ATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1925 CCAGCTACTCCGTGCTCGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         368 cercriacicceircriaacciecrecaaceiraaacirreceereaceiroaaceda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   crecritrgreithreaaccaacacaacircrearcaaaccrecratraaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                   1685 CCGAGACCCAGATGACCCCGAACTCTCGGACGACGACGAGCGAACCTCTTCGCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                    7,
                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 70.5%; Pred. No. 3.6e-153;
Matches 785; Conservative 0; Mismatches 322; Indels 7;
                                                                                                                                                                                                                          SEQ ID NO 14304148
NO 57313
                                                                                                                                                                                                                                                                                              of Ceres SEQ ID NO 13598513
in SEQ ID NO 64102
                                                                                                                                                                            no. 13491017
FILE REFERENCE: 2750-1590PUS2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
PRIOR APPLICATION NUMBER: 60/544,190
PRIOR FILING DATE: 2004-02-1
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 36626
LENGTH: 1394
                                                                                                                                                                                                                                 of Ceres
in SEQ ID
                                                                                                                                                                              Π
                                                                                                                                                                                            FEATURE:

NAME/KEY: misc_feature

LOCATION: (1)._(1394)

OTHER INFORMATION: Ortholog of

OTHER INFORMATION: as cited in

FEATURE:

NAME/KEY: misc_feature

LOCATION: (1)..(1394)

OTHER INFORMATION: ortholog of

OTHER INFORMATION: as cited in

US-11-056-355B-36626
                                                                                                              TYPE: DNA
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                               Sed.
                                                                                                                                         FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)..(1394)
OTHER INFORMATION: Ceres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           488
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

~

607

728

g

Sequence 36626, Application US/11056355B; Sequence 36626, Application No. US20060150283A1; Subjication No. US20060150283A1; GENERAL INFORMATION: APPLICANT: Brover, Vyacheslav APPLICANT: Alexandrov, Nickolai APPLICANT: Alexandrov, Nickolai TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding; TITLE OF INVENTION: Polypeptides Encoded Thereby

-11-056-355B-36626

```
1458
                                                                                                                                                                                                                                                                                                                                             1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1824
  TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT 1338
                                                                                  1339 TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCCACAAAAGGTCAGATG 1398
                                                                                                                                                                                                                                                        TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT 1518
                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                            CACTICAAICCCCACCATITAICCGTITIAITICCICTGCTITCCTITGCTCGAGICTCG 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1715 CGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGG 1774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1825 -----GGGCCGGGCGTTCCTCTCCACGGGAAATCGCGGCACAGCTCCCGACCC 1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117 CCGACGAGGAGGAGGCGTGTATACGCGCTGCACGTCGTCGTCGTCGATCCTGCCGATGA 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 14143, Application US/10449902

Sequence 14143, Application US/10449902

Publication No. US20060123505A1

GENERAL INFORMATION:

APPLICANT: National Institute of Agrobiological Sciences.

APPLICANT: Bio-oriented Technology Research Advancement Institution.

APPLICANT: The Institute of Physical and Chemical Research.

APPLICANT: Foundation for Advancement of International Science.

TITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF

FILE REFERENCE: MOA-A0205Y1-US

CURRENT APPLICATION NUMBER: US/10/449,902

CURRENT APPLICATION NUMBER: UP 2002-203269

PRIOR FILING DATE: 2002-05-30

PRIOR FILING DATE: 2002-12-11

NUMBER OF SEQ ID NOS: 56791

SOFTWARE: PatentIN Ver. 2.1

LENGTH: 1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                   421 CACTICAAICCCCACCATITAICCGITITATTTCCTCTGCTTTCCTTTGCTCGAGTCTCG
                                                                                                          301 TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                                                                                                                                                                                                                                                    TITGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACATACCT
                      241 TCATCCCACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTTATATTCTGGT
                                                                                                                                                                                                                                                                                                                                             25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1775 TCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGAC--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 14.3%; Score 437.6; DB 6; Best Local Similarity 66.0%; Pred. No. 3.5e-116; Matches 706; Conservative 0; Mismatches 339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Oryza sativa
PUBLICATION INPORMATION:
DATABASE ACCESSION NUMBER: AK064768
DATABASE ENTRY DATE: 2001-12-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-449-902-14143
                                                                                                                                                                    1399
1279
                                                                                                                                                                                                                                                        1459
                                                                                                                                                                                                                                                                                                                                             1519
                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                               1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                               g
                                                                               ò
                                                                                                               셤
                                                                                                                                                                    ð
                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                    1028 ACTCAAGCCTCTCAACCAAACAAGTAGTCCATGTCGATTGCATTATGTTGGCTCACAATC 1087
                                                                                                                                                                                                                                                        ATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAG 2583
                                                                                                                                                                                                                                                                                                                                          ACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACC 2643
                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCGGGAAAGAGGACACAGAGAGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTC 2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGGAGGCAAAGAACGAACCGAGAAAGAGTTTGAGGCATTAGCCAAAGCATCAGGCTTCA 1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCG 2763
                                                                                                                                                                    AGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACG 2523
                                                                                                                                                                                                                                                                                                  AGTCACTTCCAGAGGATGGAAAAGTGATATTAGCAGAGTGTATACTTCCAGAGACACCAG 1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1148 AGGGCATCAAAGTTGTCTGCGACGCTTTTGGTGTTAACCTTATTGAGTTACTCAAGAAGC 1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1159 GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1219 AAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG 1278
                                     TTAAAGGCATCAACTTTGATCTCCCACATGTCATCGAAGATGCTCCTTCTCATCCTGGTA 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGAGCACAAAGAGCACGACCCCAACCTTTCCTTAACAAGATCACCAGATCGGCCAG 120
2345 TGAAAGGGATCAACTTCGACCGCCC-CAACGGATTGAAGACGCCCCACCCCTTCCTGGTG
                                                                                                                 TTGAGCATGTTGGAGGAGATATGTTTGTAAGTGTCCCTAAAGGTGATGCCATATTCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGC
                                                                               TCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGA
                                                                                                                                                                                                              AGTGGATATGTCATGACTGGAGGACGAACATTGCGTGAAATTCTTGAAGAACTGCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 485; DB 8; Length 485;
Pred. No. 2.9e-130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: ROTALBAN, WILLIAM H.
APPLICANT: ROTALBAN, MARIE B.
APPLICANT: CONNETT, MARIE B.
APPLICANT: SANDERS, PAUL
APPLICANT: EAGLETON, CLARE
APPLICANT: ERGLETON, CLARE
TITLE OF INVENTION: MODIFICATION OF PLANT LIGNIN CONTENT
TITLE OF INVENTION: MODIFICATION OF PLANT LIGNIN CONTENT
TITLE OF INVENTION: MOMBER: US/11/229,856
CURRENT APPLICATION NUMBER: 10/946,650
PRIOR FILING DATE: 2009-09-22
PRIOR APPLICATION NUMBER: 10/946,650
PRIOR PILING DATE: 2004-09-22
PRIOR PILING DATE: 2004-09-22
PRIOR FILING DATE: 2004-09-22
PRIOR PILING DATE: 2004-09-22
NUMBER OF SEQ ID NOS: 86
SOFTWARE: PATENTIN VOIN SER OF SEQ ID NOS: 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITGAICTGCTCCTCTGTGGTGATGTTCATGGTT 2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1208 rcraaaacaaacaargriccrargaagargarr 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 15.8*; Score 485; DE Best Local Similarity 100.0*; Pred. No. 2.9 Matches 485; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; Sequence 78, Application US/11229856; Publication No. US20060130183A1; GENERAL INFORMATION: APPLICANT: FORSTER, RICHARD L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-11-229-856-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 78
                                                                                                                       848
                                                                                                                                                                    2464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1088
                                       788
                                                                               2404
                                                                                                                                                                                                                                                        2524
                                                                                                                                                                                                                                                                                                                                          2584
                                                                                                                                                                                                                                                                                                                                                                                                                            2644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                              908
                                                                                                                                                                                                                                                                                                968
                                                                             8 8
                                                                                                                                                                                                   8 6 8
                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                     g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                          셤
                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
```

g õ g ò 셤 ઠે

```
Seq. ID no. 12369443
                         PRIOR APPLICATION NUMBER: 60/544,190 PRIOR FILING DATE: 2004-02-13 NUMBER OF SEQ ID NOS: 119966 EROGTH: 1522
2005-02-14
                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Zea mays subsp. mays
FEATURE:
NAME/KEY: misc feature
LOCATION: (1)...(1522)
OTHER INFORMATION: Ceres Seq.
FEATURE:
NAME/KEY: misc feature
LOCATION: (1)...(1522)
OTHER INFORMATION: Ortholog of
OTHER INFORMATION: as cited in
FEATURE:
NAME/KEY: misc feature
LOCATION: (1)...(1522)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 13.7
Best Local Similarity 64.7
Matches 694; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-11-056-355B-5836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2353
                                                                                                                                                                                                            1993
                                                                                                                                                                                                                                                                                                                                                                     1994 TAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCA 2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     896
                                                                                                                                                                                                                                                                                        416
                                                                                                                                                                                                                                                                                                                                                                                                                                                      476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             eceeceecare de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de contrator de con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGCGAGGGAGCAGGGGGTTTCCACGTCGACATGATCATGCTCGCCCCACAAACCCCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5836, Application US/11056355B
Publication No. US20060150283A1
GENERAL INFORMATION:
APPLICANT: Brover, Vyacheslav
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590PUSE;
CURRENT APPLICATION NUMBER: US/11/056,355B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    657 CCAAGAAGCTGCTCGACCTCTACACCGGCTTCGACGCCGCCTCCACCGTCGTCGACGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   777 TCAACTACGACCTCCCCACGTCATCTCCGAGGCGCCGCCGTTCCCCGGGGTGGAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    837 TCGGCGCCACCATGTTCGCCTCCGTGCCCCGCGCGCGCCACGCCATCCTGATGAAGTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2470 TATGCCATGACTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTCCACGACTGGAGCGACGACGACGCGCGCGCGCTGCTCAAGAACTGCTACGACGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAACTICGACCGCCCCAACG-GATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGGAGGCGACATGTTCGTCAGCGTTCC---AAAGGGAGATGCCATTTTCATGAAGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2590 GCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGTTGGCCCACACCCAGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGATTTCAGGGCT
                                                                                                                  297 Agecgaacccgccgcccgacargaacargaaccccarccrccrccrccraca
                                                                                                                                                                                                            .934 CCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGCGCTCTACGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                        CGCGCCGGTGTGCAAGTGGCTGACGCCCAACGAGGACGACGCGTCTCCATGGCCGCCCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u> ACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TIGAAGGCGGAATCCCATICAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 537 recacedecerrecerrecaceaceraceceracecerrececerrecacracececa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cedacecccecricaaccecriricaaceaededeargaagaaccacricercarcarca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2234 TGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u> ecaaggaaggracgagaggagricaggagcregecececececearireaceger</u>
                                          1877 A---GAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACT
                                                                                                                                                                                                                                                                                    357 Actricarchadrachanneandeadachachachanneandeachanneandeachanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna de Archanna 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           477 CCTCATGAACCAGGACAAGGTCCTCATGGAGAGCTGGTACTACCTTAAGGACGCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAG 2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rcaaggccaccracarcracgccaaggccraggccarcaagricacaaag 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
US-11-056-355B-5836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                          417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
```

```
1763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----CCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAG 1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCGATGGCAAGGTCGAGCGGCTCTA 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2349 AGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCCACCCCTTCCTGGTGTCAA 2407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       824 CGGGCCGGGC-----GCGTTCCTCTCCACGGGGAAATCGCGGCACAGCTCCCGAC--- 1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      323 GCCCGGCGACCCCGCCGCGCGCGGCCATGGTGGACCGCATGCTCCGCCTGCTGCTCGCCTTC 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           500 cerececrearda a ceada de concerción de acesta de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de concerción de conce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2169 IGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1229 TACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2289 TGTCGGAGGCGCCACTGGGGCCGTGCTCAGCATGGTCGTTGCCAAATACCCATCAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           740 cerecececececerecececececececerecenteacerecececececececarere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     440 crececededeceirerechanderecreaceandandendededererechiedede
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              560 egrecredacedecearcecerreaacaaceceracedearcacecerreacea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              680 carcaccaacaacticciccacarreracacceccriccacccicricacccicciccacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1989 CGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2049 ACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 620 cescacesacricecerrica acceserar ca accase es constructor con cesca con contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1704 GACCCAAGICTCGCACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCAGCGCGCCTCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1764 GCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        203 ccrecceargacecreaagaaceccarceaecreeeccrecreeaecrecrecrecaeaaeaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chaccaccicciccocic - - ccacanccaccaccaccccccanccaccccra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1522;
of Ceres SEQ ID NO 14304148
in SEQ ID NO 57313
                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: (1). (1522)
OTHER INFORMATION: Ortholog of Ceres SEQ ID NO 13598513
OTHER INFORMATION: as cited in SEQ ID NO 64102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 419.6; DB 9;
Pred. No. 6.3e-111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches 359;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
```

402

2241

462

2301

522

2361

582

2420

2477

642

2537

2597

2657

```
AGGACACAGAAGGAGTICGAGGCATIGGCCAAAGGGGCCGGATITCAGGGCTICCAAGIC 2717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    823 GAGCAGGGGTGTTCCACGTCGACATGATCATGCTCGCCCACAAACCCCCGGGGAAGGAG 882
GIGTGCAAGTGGCTGACGCCCAACGAGGACGGCGTCTCCATGGCCGCCCTCGCCCTCGTG 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               643 GACATETTCGCCTCCGTGCCCCGCGGCGACGCCATCCTGATGAAGTGGATCCTCCAC 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          703 GACTGGAGCGACGGCGCCCCCCCCCCCCCCAAGAACTGCTACGACGCCCCCCCGGAG 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      883 AGGTACGAGAGAGATTCAGGGAGCTCGCCCGCCGCCGGATTCACCGGCTTCAAGGCC 942
                                                                                                                                                                                                                                                                283 AACCAGGACAAGGTCCTCATGGAGAGCTGGTACTACCTTAAGGACGCAGTCCTGGACGGC
                                                                                                                                                                                                                      GGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCCGA
                                                                                                                                                                                                                                                                                                                                                 CGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                  2242 ATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                463 CTGCTCGACCTCTACACCGGCTTCGACGCCCCTCCACCGTCGACGTCGACGTCGACGCGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2302 ACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            523 gradáciacionerar a desección de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACCGCCCCAACG-GATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACATGTTCGTCAGCGTTCC---AAAGGGAGATGCCATTTTTCATGAAGTGGATATGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2538 AATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   763 cacedeaadeiredreciredreciedreciecreciedeaadereceaedeaede
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2598 ACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACACAACCCAGGCGGGAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       583 GACCTCCCCCACGTCATCTCCGAGGCGCCGCCGTTCCCCGGGGTGGAGCACGTCGGCGGC
                                                                                                 AACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: ZYLETA, Capina
APPLICANT: ZYLETA, Chaim
APPLICANT: Frenkel, Chaim
APPLICANT: Belanger, Faith
TITLE OF INVENTION: PRODUCTION OF VANILLIN IN MICROBIAL CELLS
FILE REFERENCE: RUCC-0064
CURRENT PAPLICATION NUMBER: US/10/532,464
CURRENT FILING DATE: 2005-04-22
PRIOR APPLICATION NUMBER: US 60/412,649
PRIOR FILING DATE: 2002-10-23
PRIOR FILING DATE: 2002-10-23
NUMBER OF SEQ ID NOS: 2
SCOFTWARE: Patentin version 3.3
SEQ ID NO 1
LENGTH: 1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2718 ATGIGCIGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAG 2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Acctacatctaccccaaccccrecccarccactrcaccaad 984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/10532464
Publication No. US20060172402A1
GENERAL INFORMATION:
APPLICANT: Havkin-Frenkel, Daphna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 12
US-10-532-464-1
                                                                                                                                                                                                                                                                                                                                                 2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2362 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2478
                                                                                                 2902
                                      223
                                                                                                                                                                                                                            2122
                                                                                                                                                        엄
                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                 ð
                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1941
                                                                                                                                                                                                                                                                                                                                                                                           GTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATG 2061
                                                                                                                                                                                                                                                                                   979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGAAGGCGCCGCTGCTGACGCCGGCGGGGGTGGCCGACAAGCTGCCGTCCAAGGCGAAC 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGGCGGCGGCCGACATGGTGGACCGCATGCTCCGCCTGCTCCCTACAACGTCGTC 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       163 AGGTGCGAGATGGAGGAGGCGCCGACGGCAAGCTCTCCCGCCGCTACGCCGCCGCCGCCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4559, Application US/10449902

Sequence 4559, Application US/10449902

Publication No. US20060123505A1

GENERAL INFORMATION:

APPLICANT: National Institute of Agrobiological Sciences.

APPLICANT: The Institute of Physical and Chemical Research.

APPLICANT: Foundation for Advancement of International Science.

TITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF

FILE REFERENCE: MOA-A0205Y1-US

FILE REFERENCE: MOA-A0205Y1-US

CURRENT PAPLICANTION NUMBER: US/10/449,902

PRIOR FILING DATE: 2003-05-29

PRIOR FILING DATE: 2002-05-30

PRIOR FILING DATE: 2002-12-11

NUMBER OF SEQ ID NOS: 56791

SOFTWARE PATENTING UNCES: 56791

SEQ ID NO 4559
CGGGGTCAACTTCGACCTGCCGCACGTCATCTCCGAGGCGCCGCCGTTCCCCGGGGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATCCTCCACGACTGGAGCGACGCGCACTGCGCCACGCTGCTCAAGAACTGCTACGACGC
                                                                                                                                                                                                                                                                                                                                                    GCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACACCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGATTTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --GAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCG
                                                                                                 GCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTG
                                                                                                                                                           860 CCACGIGGGCGGGGACAIGITCGCGICCGIGCCCGCCGGCGACGCCAICCICAIGAAGIG
                                                                                                                                                                                                                            GATATGCCATGACTGGAGTGACGACCATTGCGCGGAAGTTCCTCAAGAACTGCTACGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGCAAGGAGCGGTACGAGCGCGAGTTCCGCGAGCTCGCAAAGGGCGCCGGCTTCTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ceceaegeaecegrearecreaacegaarerrecegerecreecaageracreegeere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAG 2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTCAAGGCCACCTGCATCTACGCCAACGCCTGGGCCATCGAGTTCATCAAG 1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 418; DB 6; Length 12
Pred. No. 1.6e-110;
0; Mismatches 300; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , DATABASE ACCESSION NUMBER: AK061859
, DATABASE ENTRY DATE: 2001-12-06
US-10-449-902-4559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 13.6%;
Best Local Similarity 67.4%;
Matches 635; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PUBLICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        : Oryza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
US-10-449-902-4559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            103
                                                                                                 2408
                                                                                                                                                                                                                                                                                   920
                                                                                                                                                                                                                                                                                                                                                 2528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2002
                                      800
                                                                                                                                                                                                                            2468
                                                                                                                                                                                                                                                                                                                                                                                                               980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                   요
                                                                                                                                                  셤
                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                           8 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠ
                                                                                              8
                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
TACTCCGTGCTCACGTGCACCTCCGGATGCCAAGGTCGAGGGCTCTAC 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1824 cg------gaccagagacarrecrercacagagaaarreacagacacacagare 1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1876 CAGAACCCCGAAGGCACCCGTC----ATGCTCGACCGGATCTTCCGGCTGCTGGCCAGC 1929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTT 2844
                                                                                                                                                                      ĠrGĠĊTAAŤTTGGAŤGCTÄŤŤŤTCÅCATGĊAĀGĀTĠŦĠŦĠŦĠŤĊŦŤAŦTĀTAŤĠAĀŤG 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    254 eeccescesceccaaeecaccacecaececces 313
APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590PUS2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
PRIOR APPLICATION NUMBER: 60/544,190
PRIOR APPLICATION NUMBER: 60/544,190
NUMBER OF SEQ ID NOS: 119966
SEQ ID NOS: 119966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1704 GACCCAAGTCTCGGACGACGAGGGGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1764 GCTCCCCATGGTCCTAAAGGCCGCCATCGAGTCGACCTCCTCGAGATCATGGCCAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTATGCTAATGTTTGGGTCATGGAATTCAACAAATAGTAATCTTGAAACTCCATATTGT
                                                        GCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: (1)...(1531)
OTHER INFORMATION: Ortholog of Ceres SEQ ID NO 14304148
OTHER INFORMATION: as cited in SEQ ID NO 57313
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(1531)
OTHER INFORMATION: as cited in SEQ ID NO 64102
                                                                                                                                                                                                                     CGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA 2880
                                                                                                                                                                                                                                                          tch
al Similarity 64.2%; Pred. No. 1.1e-104;
688; Conservative 0; Mismatches 358;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  no. 12435048
                                                                                                                                                                                                                                                                                                                                                       ; Sequence 5315, Application US/11056355B; Publication No. US20060150283A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq. ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          таув
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA ORGANISM: Zea mays subsp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (1)..(1531)
OTHER INFORMATION: Ceres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                         RESULT 13
US-11-056-355B-5315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-11-056-355B-5315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1930
                                                                                                                                                                                     1124
                                                                                                                                                                                                                           2845
                                                                 2725
                                                                                                         1064
                                                                                                                                              2785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                      8
                                                                                               a
                                                                                                                                              ð
                                                                                                                                                                            셤
                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2605 ATGTGATCCACATCGACTGCATCATGTTGGCCCACAAACGGGGAAAGAGAGACAC 2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                944 grorcrircarricaacarcararardridecrcacaarccreegeaaageaaacaa 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GIGACGACCATTGCGCGAAGTICCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAA 2544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGIGAICGIIGCAGAGIGCGIACICCCIGIGAACACCAGACACGAGCCIAGCGACCAAGA 2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      865 AGAAGGAGTICGAGGCAITGGCCAAAGGGGCCGGAITICAGGGCTICCAAGICAIGTGCI 2724
                                                                                                                                                                                                                                                                                                                                                                                                    1886 AGGCACCGTCATGCTCGACCGGATCTTCCGGCTGCCAGCTACTCCGTGCTCACGT 1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2066 AGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAA 2125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -GCCCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACA 2424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCACCTTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGT 2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACC 2065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTG 2305
                                                                                                                                                                                                                                                1825
                                                                                                                                                                                                                                                                                                                             GGCCGGGCGCGTTCCTCCACGGGGAAATCGCGGGCACAGCTCCCGACCCCAGAACCCCG 1885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                764 IGITIGAAAGIGICCCCATIGGIGATGCAATCITCATAAAGIGGATICITCATGATIGGA 823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Grgargaccarrcraagcrccraagaaarrcraaaarcrraccraacaacraagaa 883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         524 İTAATAAĞGTGİTCAAÇGAĞĞĞÇATĞAAĞAĞAĞİĞĞİTĞATĞATATAAĞĞAAĞAĞTTT 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    103
                                                                                                                                                                                                                                                                                                                                                               224 TAGCTCCGGTCATGATCGAGCGGATCCTGCGCCTGCTCACCAGCTACTCCTTAACT 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGAACTATCAGTATGATTACTGCAAAGTATCCACATATACATGGGATTAATTTTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       884 AAGTCATAGTTGTGGAATGCATTCTTCCCGATGCACCTTTTGGTGACGCCCAGAGGCTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   584 TAGAGAGATACAAAAGGTTTGAAGATGTCAATGTTTTAATTGATGTTGGTGGTGGAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACC
                                                                                                                                                                                                                                                TCCCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACG
                                                                                                                                                                                                                                                                      1706 CCCAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGC
                                                                                                                                  1;
                                                                                       Score 404; DB 6; Length 1219;
Pred. No. 1.9e-106;
0; Mismatches 475; Indels
                                                                                         Query Match
Best Local Similarity 59.5%;
Matches 700; Conservative
                  ; TYPE: DNA
; ORGANISM: Vanilla planifolia
US-10-532-464-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   824
                                                                                                                                                                                                                                                        1766
                                                                                                                                                                                                                                                                                                                                   1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2186
                                                                                                                                                                                                                 44
                                                                                                                                                                                                                                                                                            104
                                                                                                                                                                                                                                                                                                                                                                        164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
```

g 8 8

8 8

a

8 8 ò

원 ઠ 셤

ò

음 성

8 6

8 6 ò ઠે g ò g 8 8 8

g ઠે ď ઠે

1763

200

5

1823

```
PRIOR APPLICATION NUMBER: US 60/143,833
PRIOR FILING DATE: 1999-07-14
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2002-06-18
NUMBER OF SEQ ID NOS: 407
SEQ ID NO 24
LENGTH: 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 106, Application US/11397533 Publication No. US20060183895A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                       TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JS-11-397-533-106
                                                                                                                                                                                                                                                                                                                                                                                        US-11-397-533-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ଚ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1031 Acceceaagececadegeceretrecacereacarearearearecacececacaacecedes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1091 GGCAAGGAGCGGTACGAGCGCGAGTTCCGCGAGCTCGCCAAGGGCGCCGGCTTCTCCGGG 1150
                                                                        1990 GGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCCATCGCCGCA 2049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAA 2349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGACACG 2588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              611 escacesacececerricaacescererricaaceaesecarisaasaacearceaereare 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   970
                                                                                                                                                                                                                                                                                                                                                                                        GTGCTGGACGGCGGCATCCCGTTCAACAAGGCGTACGGGATGACGGCGTTCGAGTACCAC 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           671 ATCACCAAGAAGCTGCTGGACTTCTACACGGGCTTCGAGGGCGTGTCGACGCTGGTGGAC 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGGCGGCGGCGTGGCGCCACGCTGCACGCCATCACGTCCCGCCACCCCGCACATCTCC 790
      374 TACGACGTCCGGTGCCAGATGGAGGACCGG----GACGGCCGGTACGAGCGCCGCTAC 430
                                                                                                                                                                                             CTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    791 GGGGTCAACTTCGACCTGCCGCACGTCATCTCCGAGGCGCCGCCGTTCCCCGGCGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGC
                                                                                                                  TCCGCCGCCGCTCTGCAAGTGGCTCACCCCCAACGAGGACGGCGTGTCCATGGCCGCC
                                                                                                                                                                                                                                                            croscocroarcados de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo de constructo 
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2230 ACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2469 ATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAACCCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TICCAAGICATGIGCIGCGCITITCGGCACTCACGICATGGAGTICCTGAAG 2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rrcaaggccaccracarcracgccaaggccreggccarcgagricarcaag 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-11-397-533-24

Sequence 24, Application US/11397533

Publication NO.

Publication NO.

APPLICANT: Bloksberg, Leonard N.

APPLICANT: Bloksberg, Leonard N.

APPLICANT: Havukkala, Ilkka

TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content
FILE REFERENCE: 11000.110036

CURRENT APPLICATION NUMBER: US/11/397,533

CURRENT PILING DATE: 1997-11-21

PRIOR APPLICATION NUMBER: US 08/975,316

PRIOR FILING DATE: 1997-11-21

PRIOR FILING DATE: 1998-09-11

PRIOR FILING DATE: 1998-10-09
                                                                                                                                                                                                                                                            491
                                                                                                                                                                                                                                                                                                                                                                                        551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1151
                                                                                                                                                                                                 2050
                                                                                                                                                                                                                                                                                                                          2110
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2709
                                                                                                                                   431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ብ ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                               셤
                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                      ठे
                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                    Š
                                                                                                                                                                                             8
```

```
1659 AGAGGAGAAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACCCCAAGTCTCGGA
                                                                                                                                                                                                                                                                                                                                                                      CGACGAGGCGAACCTCCCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133 CGAGGAGGCGAACTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTCCCATGCTCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1719 AAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          193 CAAGGCCGCCATCGACGTCGACCTCCTCGAGATCATGGCCAAGGCCGGGCGGCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGGAGGCACCGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    313 GCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1959 CCTCCCCGATGGCAAGGTCGAGCGCTCTACGGCTTAGCGCCGGTGTGC 2007
                                                                                      ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       373 CCTCCCCGATGCCAAGGTCGAGCGCCTCTACGCTTAGCGCCGGTGTGC 421
        Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: BLOkeberg, Leonard N.
APPLICANT: BLOkeberg, Leonard N.
APPLICANT: BLOkeberg, Leonard N.
TITLE OF INVENTION: Maderials and Methods for the
TITLE OF INVENTION: Maderials and Methods for the
FILE REPERENCE: 11000.1003c6
CURRENT APPLICATION NUMBER: US/11/397,533
PRIOR FILING DATE: 1997-11-21
PRIOR FILING DATE: 1995-10-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR APPLICATION NUMBER: US 60/143,433
PRIOR FILING DATE: 1998-07-14
PRIOR FILING DATE: 1998-07-14
PRIOR FILING DATE: 1998-07-14
PRIOR FILING DATE: 1998-07-14
PRIOR FILING DATE: 1998-07-14
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 10/174,693
PRIOR PRIOR PILING DATE: 2000-07-12
PRIOR PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 1000-07-12
PRIOR PILING DATE: 1000-07-12
PRIOR PILING DATE: 1000-07-12
PRIOR PILING DATE: 1000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2000-07-12
                                                                                  Indels
Query Match 12.7%; Score 391.4; DB 7; Best Local Similarity 97.3%; Pred. No. 4.3e-103; Matches 398; Conservative 0; Mismatches 11;
```

72

1778 132

192

ö

1838

252

1898

1958

```
1661 AGGAGAGAATGGGTTCGACCGGCTCCGAGACCCCAGATGACCCCAAAGTCTCGGACG 1720
                                                                                                                                                                  1901 TCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCAGTGCACCCTCGGCGACC 1960
                                                                          ö
                                                                                                                                                                                                                                      61 AGGAGAGAATGGGTTCGACCGGATCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACG 120
                                                                                         9
                                                                                  Gaps
                                                            ö
                                                                                                                                                                                                                                                           Query Match 12.7%; Score 391; DB 7; Length 407; Best Local Similarity 97.5%; Pred. No. 5.5e-103; Matches 397; Conservative 0; Mismatches 10; Indels
; SEQ ID NO 106
; LENGTH: 407
; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-11-397-533-106
                                                                                                                                                                                                  1841
                                                                                                                                                                                                            g
                                                                                                                                                                                                                               8 8
                                                                                                                                                                                                                                                        8
                                                                                     셤
                                                                                                         8686
                                                                                                                                                                   8 8 8
                                                                             ò
```

Search completed: November 1, 2006, 14:52:51 Job time : 666.818 secs

```
GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
```

OM nucleic - nucleic search, using sw model

November 1, 2006, 11:00:22 ; Search time 2754 Seconds (without alignments) 7772.260 Million cell updates/sec Run on:

1 agcaccatcagcaaaaaata........3070 US-10-702-319A-113 3070 Perfect score: Sequence:

Gapop_60.0 , Gapext 60.0 OFIGO NUC Scoring table:

5244920 seqs, 3486124231 residues Searched:

20 Word size :

10136 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

geneseqn2003cs:* geneseqn2003ds:* geneseqn2004as:* geneseqn2004bs:* geneseqn2001bs:* geneseqn2002as:* geneseqn2003as:* genesegn2003bs:* geneseqn2000s:* geneseqn2001as:* geneseqn2002bs:* geneseqn1980s:* geneseqn1990s:* Genesed 8:4 Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

geneseqn2005s:* geneseqn2006s:*

	Description	Abk17109 Eucalyptu	Adh75529 Eucalyptu	Adw80563 E. grandi	Aac62810 O-methyl	Abk17075 Eucalyptu	Adh75476 Eucalyptu	Adw80510 E. grandi	Aaa68014 Eucalyptu	Add41764 O-methyl	Adq88319 Eucalyptu	Adg88320 Eucalyptu	Adg88321 Eucalyptu	Adq88322 Eucalyptu	Aac62762 O-methyl	Abk17027 Eucalyptu	Adh75428 Eucalyptu	Adw80462 E. grandi	Adq88323 Eucalyptu
SUMMARIES	ID	ABK17109	ADH75529	ADW80563	AAC62810	ABK17075	ADH75476	ADW80510	AAA68014	ADD41764	ADQ88319	ADQ88320	ADQ88321	ADQ88322	AAC62762	ABK17027	ADH75428	ADW80462	ADQ88323
	DB	9	10	14	ო	9	10	14	٣	10	13	13	13	13	ო	ø	10	14	13
	Query Match Length DB	3070	3070	3070	2096	2096	2096	2096	1630	1630	534	485	306	293	661	661	661	661	119
æ	Query Match	100.0	100.0	100.0	40.9	40.9	40.9	40.9	25.2	25.2	17.4	15.8	10.0	9.5	8.9	8.9	8.9	8.9	3.9
	Score	3070	3070	3070	1255	1255	1255	1255	774	774	534	485	306	293	272	272	272	272	119
	Result No.	П	7	٣	4	S	9	7	œ	6	10	11	12	13	14	15	16	17	18

Add41763 O-methyl Adv23844 Plant OMT Adx0845 Eucalyptu Ada69595 Eucalyptu Ada67931 Eucalyptu Add41681 O-methyl Add88224 Eucalyptu Add88224 Eucalyptu Add88224 Eucalyptu Add88224 Eucalyptu Add88226 Eucalyptu Add88229 Hunan Egr Adx53019 Eucalyptu Adx53019 Eucalyptu Adx53019 Eucalyptu Adx6259 Hunan Egr Adx02819 Mouse Sos Adx72424 Murine Ca Adx7244 Murine Ca	Abk99972 Human CAD Aai82105 Human pol Aai83240 Human pol Adp04958 Chinese c	Aaa31195 Plant mic Aaa31117 Plant mic Aaf64250 Novel hum Acc55509 Rice endo Aaa79498 Eucalyptu Ads54768 Bacterial
AAA68013 ADD41763 AAV28844 AAV28844 AAAC69595 AAA67931 ADD41681 ADD41681 ADD8324 ADG8325 AAA64869 ADG8325 AAA64869 ADG82298 ADG8298 ADG8298 ADA74144 ADM74414	ABK99972 AAI82105 AAI83240 ADP04958	AAA31195 AAA31117 AAF64250 ACC55509 AAA79498 ADS54768
0 1 2 3 8 8 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	4 4 4 1 1 2 1 2 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1	13 13 13
4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	157875 157875 308 350 353	356 402 404 529 537 1262
	, , , , , ,	
111 1111 1111 1111 1111 1111 1111 1111 1111	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	ម មេ មេ មេ មេ មេ មេ មេ មេ មេ មេ មេ មេ មេ
10000000000000000000000000000000000000	3337	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
	υ υ	. 0

ALIGNMENTS

Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Eucalyptus grandis; ss; PCR primer. Eucalyptus grandis promoter polynucleotide #51. BP ABK17109 standard; cDNA; 3070 (first entry) Eucalyptus grandis. WO200198485-A1. 26-MAR-2002 ABK17109; RESULT 1 **ABK17109**

27-DEC-2001.

20-JUN-2001; 2001WO-NZ000115.

20-JUN-2000; 2000US-00598401. 28-NOV-2000; 2000US-00724624.

(GENE-) GENESIS RES & DEV CORP LTD. (FLET-) FLETCHER CHALLENGE FORESTS IND LTD.

Lasham A; Eagleton C, Rice S, Perera R,

Novel polymucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polymucleotides in transgenic plants. WPI; 2002-114583/15.

Claim 1; Page 103-104; 121pp; English.

The invention relates to isolated promoter sequences from Pinus radiata and Eucalyptus grandis, comprising a sequence chosen from leaf-, root-, flower-, pollen-, bud-, meristem-specific promoters or temporally

```
regulated promoters such as xylogenesis-specific promoters. The promoter polypeptides and their related polynucleotides are useful in the production of genetic constructs, used for modifying gene expression in a carget organism, in particular a plant. The method is useful for modifying expression of a polynucleotide that comprises an intron caquence, through removal of the intron sequence. The method is useful cc external stimulus, such as environmental factors and cellular responses to crarge antibodises are useful in genome and physical mapping, in positional craise antibodises, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine biological activity, to cloning of genes, in various assays to determine biological activity, to cloning of quantitatively determine levels of interacting proteins or other compounds. Sequences ABKI7016-ABKI7125 represent Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGATAGTCCTTTAGAAAGTCCCA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGTATTGGTCTAATTGTTCAGGATGTGGTACCTTGGGTATTAAGGGCTATGATGGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGAGATTCGGTGGTATGATGCCAGAATTAAAAAAGTGCTGCACTGATGAGAATAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCCTGGAGTATATCCCAATGATGCTGGTAGAAGAGTCCATTCAAGCCATCTGGACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arccredactatatcccaardargcredragaagaccarrcaagccarcreg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TICCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGAACAGCCCGGAATTGACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGCGATTGGCAATCACCTTAGAAATGATCTTATATGCGTAATTACAAAGACTGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGGTATTGGTCTAATTGTTCAGGATGTGGTACCTTGGGTATTAGGGCTATGATGGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                               AGGCAAAAGTTCGCCGTTGAATTTTGACAGCAAAAGACACCGTCGTTATGCATTGCATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGAACAGCCCGGAATTGACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACATITICIGACITITAAATIGAIGIAGAACCICITAGACTAITAAAAIATIGICCIGAAI
                                                                                                                                                                                                                                                                                                                               CTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                 GATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAATA
                                                                                                                                                                                                                                                                                AGCACCATCAGCAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                 6; Length 3070;
                                                                                                                                                                                                      Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                 DB
                                                                                                                                                                                                                               ; Score 3070; I
; Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                 Query Match
Best Local Similarity 100.0%;
Matches 3070; Conservative 0
                                                                                                                                                                                    the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                     ò
          88888888888888888888888888
                                                                                                                                                                                                                                                                                      8
```

ري م	781	81 TATTAGGGACATATTCATCTCATTAGTAACAACCTAAGGACACTGGTTCAGAATAGGCAA 840
à	841 (STAGTCTCGGATGTCCCACTGTCTGAAATAGATGTGAAAAGTAACCTATCGTCATCATCTT 900
Op	841 (gradicicaardriccacidicidaaaragaaggaaaggaaaggaaccatcaccatcatctr 900
<u>ن</u> و	901	CAAAATITCAGGATCGCGCACCCAAGCTTGATTGTCATCCTGCAACATACTAATCTTGTT 960
ò	961	TCGTTGTTGTTGTTGTTGTTGCATGAAAAATTTAGTATTTTTGTGCCCCCAGCT 1020
qq	961	
ò	1021	GAGCCATTTAATTCGAGAGCACATCGCCCAAAATTATTCTTCTTGCTGCCATAACTGTCG 1080
qq	1021	
ठे व	1081	AATTITCTCTITTAGGTAAGTAACCAATGATGCGCCATGTTGACAAAAGGCTGATTAGT 1140
3 8	1141	ATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAA 1200
a d	1141	
ζŎ	1201	
ΩÞ	0	
λŏ	1261	CATCACCAGATCGGCCAGTAAGGGTAATTAATTAACAAATAGCTCTTGTACCGGGAA 1320
QQ		CATCACCAGATCGGCCAGTAAGGTAATATTAATTTAACAAAIAGCICIIGIACCGGGAAA 1920
٥٧		CTCCGTATTTCTCTCACTTCGATAAACCCCTGATTAATTTGGTGGGGAAAGCGACGAA 1380
Д	1321	
δ	1381	CCCACAAAAGGTCAGATGTCATCCCACGAGAGAGAGAGAG
qq	œ	CCCACAAAAGGTCAGATGTCATCCCACGAGAGAGAGAGAG
ò	4	TTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATAT
Dp		TTCTCTCTATATTCTGGTTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATAT 1500
ò	1501	rggrgtagggrgcaataftttgggggggggtggtgaagggaaggttggtgaaggtgggaaggtfga 1560
Dþ	1501	regigtaggerccaatatitigceggaggeriegtgaaccecaaagticctatatates issu
δ	1561	ACCTCCACCACCACTACCTCACTTCAATCCCCACCATTTAATCCGTTTTATTACTTCGTTT 1620
QQ	1561	ACCTCCACCACCATACCTCCACTTCAATCCCCACTTTATCCGTTTTATTTCCTCTGCTT 1820
č	~	TCCTTTGCTCGAGTCTCGCGGAAGAGAGAGAGAGGAGAG
ор	1621	TCCTTTGCTCGAAGTCTCGCGGAAGAGAGAGAAAAAGAGAGAG
<i>\</i> 0	1681	GGCTCCGAGACCCGGATGACCCCGACCCGAGTCTCGGACGAGGCGAACCTCTTCGCC 1740
qq	∞ .	GGCTCCGAGACCCAGATGACCCCGACCCAAGTCTCGGACGAGGGGAGCGAACCTTTCGCC
ζ	1741	ATGCAGCTGGCGAGCGCCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGAC 1800
QQ	4	Ardcadcriggcdagcgccrcccrarggrccrccraraggccgccarcaagarcaac 1800
ò	8	CTCCTCGAGATCATGGCCAAGGACGGGCGCGTTCCTCTCCACGGGGGGAAATCGCG 1880
qq	1801	CTCCTCGAGATCATGGCCAAGGACGGGCCGGGCGGTTCCTCTCCACGGGGGGAAA1CGCG 1880

a

셤

ઠે

6 8 6

8 6 8 6 8

ઠ

8 6

8 6

8 6

8 G

충 음 8 8 8 8

⋧

```
3000
                                                                                       3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGGGATAATAGATTCACCAGAGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 GATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAATA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a new isolated polynucleotide comprising the Pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse sequence or inverted repeat or a sequence having at least 40, 60, 75 ep0% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to
2941 AGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGCCTGAATGAAGAAATTGTGATATTCTGTCTTTTTTCAGTAAATCACTTCGAACA
                                                                                       3001 Greccigaareareaarricreararricrercricrirrricagraarreacriceaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 AGCACCATCAGCAAAAAAAAAAAAGATGGGATGGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCACCATCAGCAAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pinus radiata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                  ds; Monterey pine; superubiquitin; promoter; gene expression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New polynucleotide of the superubiquitin promoter from Piuseful in modifying gene expression in a target organism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                             Eucalyptus grandis superubiquitin related sequence #49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 3070; I
; Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure, SEQ ID NO 113; 123pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 superubiquitin promoter related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Visser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENESIS RES & DEV CORP LTD.
RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wood M, Eagleton CK,
                                                                                                                                                                                                                                                    BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
100.0%;
                                                                                                                                                                                                                   RESULT 2
ADH75529
ID ADH75529 standard; DNA; 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 100.
Best Local Similarity 100.
Matches 3070; Conservative
                                                                                                                             AAAAAAAAA 3070
                                                                                                                                                              3061 AAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-903678/82.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                       transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO2003093475-A1.
                                                                                                                                                                                                                                                                                                                             22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SJ,
                                                                                                                             3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                        3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                         ADH75529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (RUBI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rice
                                                                                     g
                                                                                                                                                       ద
                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŝ
                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2700
                                                                                                                                                                                                                    2100
                                                                                                                                                                                                                                                                                         2160
                                                                                                                                                                                                                                                                                                                                                                2220
                                                                                                                                                                                                                                                                                                                                                                                                  2220
                                                                                                                                                                                                                                                                                                                                                                                                                                       2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2941 AGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT ·3000
                        GCACAGCTCCCGACCCCGAACCCCGAGGCACCCGTCATGCTCGACCGGATGTTTCCGGCTG
                                                                                           CTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAG
                                                                                                                                                                                                                                                                                                                                                                                           GAGTATCATGGCACCCGACCCGCGATCAACAACTTTTAACCGGGGAATGTCTGATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGTCAAGCACGTCGGAGGGAGCGACATGTTCGTCAGCGTTCCAAAGGGAGAGATGCCATTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA
                                                                                                                                                                ATCGCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTG
                                                                                                                                                                                                                                         AAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         recacearractardaagaagaracregaacaracaaggecrregaggeceregagaec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gredricarchedeageceachereseccerecreacherearearearechannacea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCCTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGGGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCCAGGGGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccecrrcarcracrcrargrandargrandargrandargrandargrandarg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA
   GCACAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTG
                                                                      CTGGCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAG
                                                                                                                                             CGGCTCTACGGCTTAGCGCCGGTGTGCAGTTCTTGGTCAAGAACGAGGACGGGGTCTCC
                                                                                                                                                                                                                                                                                                                         AAAGATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTC
                                                                                                                                                                                                                                                                                                                                                                GAGTATCATGGCACCGGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTTCGAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGGTCGATGTCGGAGCCGCCACTGGGCCCGTCCTCAGCATGATCGTTGCCAAATACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGATGCCCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2881
                                     1861
                                                                                                                                                                                                                    2041
                                                                                                                                                                                                                                                    2041
                                                                                                                                                                                                                                                                                        2101
                                                                                                                                                                                                                                                                                                                             2101
                                                                                                                                                                                                                                                                                                                                                                                                  2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2641
                                                                        1921
                                                                                                          1921
                                                                                                                                             1981
                                                                                                                                                                                 1981
                                                                                                                                                                                                                                                                                                                                                                2161
                                                                                                                                                                                                                                                                                                                                                                                                                                      2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2881
```

g

5 B 5

g

8 B 8

8 &

```
ACATTITICIGACTITIAAAITIGAIGIAGAACCICTIAGACTAITAAAATATIGICCIGAAI 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Trecaecerarearagecrirergeararecarriraagaacagecegaarreacgrer 360
                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to a novel isolated polynucleotide sequence comprising a functional vascular tissue-specific Eucalyptus grandis caffeit acid O-methyltransferase (COMT) promoter (ADM80662). Also claimed is a genetic construct comprising the above golynucleotide specification (ADM80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polynucleotides involved in wood formation. The present sequence is used
                                                                                                                                                                                                                                                                                                                                                 New isolated polynucleotide sequences comprising a functional vascular tissue-specific Eucalyptus grandis caffeic acid O-methyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccarreracccareragesreaarrecraeaereaeseaearaerecrrraeaaaerecea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATAAAAAGGTAGGGAGATAGGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATTGCATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATTGCATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGATAGTCCTTTAGAAAGTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGAACAGCCCGGAATTGACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 AGCACCATCAGCAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 14; Length 3070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3070 BP; 829 A; 718 C; 755 G; 768 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                  promoter, useful for modifying gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%; Score 3070; Best Local Similarity 100.0%; Pred. No. 0; Matches 3070; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 2; SEQ ID NO 113; 82pp; English.
                                                                                                                                                                                                                                       GENESIS RES & DEV CORP LTD. RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                     S,
                                                                         25-MAR-1999; 99US-00276599.
30-JUL-1999; 99US-0146591P.
24-FEB-2000; 2000WO-NZ00018.
20-JUN-2000; 2000US-00598401.
28-NOV-2000; 2001US-0345397P.
30-APR-Z002; 2002US-00137036.
08-NOV-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                     Eagleton
                                              2003US-00702319
                                                                                                                                                                                                       08-NOV-2002; 2002US-0425087P
                                                                                                                                                                                                                                                                                    Rice SJ,
                                                                                                                                                                                                                                                                                                                     WPI; 2005-131806/14
                                            06-NOV-2003;
              03-FEB-2005
                                                                                                                                                                                                                                                                                     Perera R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                       (GENE-)
                                                                                                                                                                                                                                                         RUBI-)
 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                    2760
                                                                                                                                                                                                                                                                                                                                                                                                                    2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2880
                                                                                                                                                                                                                         2640
                                                                                                                                                                                                                                                                                                                     2700
                                                                                                                                                                                                                                                                                                                                                    2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTITITGAGICTICTGCATACTGATTICACAGAATGTGTAACGAAACGGCGTATATGGAT 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGCCTGAATGAAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTTCGAACA 3060
TCAATGAAAGGGATCAACTTCGACCGCCCCAACGGATTGAAGACGCCCCACCCTTCCTG
                                                                                                                                                                                                                                                                                                                                                                     TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGCCCTTTTCTCACAGTTGGCTTCGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GIGCCTGAATGATGGAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTTCGAACA
                                                 GTGTCAAGCACGTCGGAGGCGACATGTTCGTCACGTTCCAAAGGGAGATGCCATTTTCA
                                                                                                               TGAAGTGGATATGCCATGACTGGACTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                        ACGATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACC
                                                                                                                                                                                        Acgariecectroccaacaaregaaagerearcerrecagaereceracerecererere
                                                                                                                                                                                                                        CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                         CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                                                                                                                                                                                                                                      ACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCCAAAGGGGCCCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                    CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTATGTCTATAA
                                 GTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCA
                                                                                             TGAAGTGGATATGCCATGACTGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT
                                                                                                                                                                                                                                                                                         ACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGAT
                                                                                                                                                                                                                                                                                                                                                    TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plant; transcription; caffeic acid 0-methyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    grandis caffeic acid O-methyltransferase cDNA SEQ ID NO:113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
1. 1643
/*tag= a
1019. .1676
/*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADW80563 standard; cDNA; 3070 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US2005026162-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       wood;
 2341
                                                             2401
                                                                                                                                                          2521
                                                                                                                                                                                        2521
                                                                                                                                                                                                                                                         2581
                                                                                                                                                                                                                                                                                                                      2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3061
                               2401
                                                                                              2461
                                                                                                                            2461
                                                                                                                                                                                                                         2581
                                                                                                                                                                                                                                                                                                                                                    2701
                                                                                                                                                                                                                                                                                                                                                                                    2701
                                                                                                                                                                                                                                                                                                                                                                                                                    2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADW80563;
                                                                                                                                                                                                                                                                                         2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Key
5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                          g
                                                                                                                                                                                     셤
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                જે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                        ઠે
                                                                                         8
                                                                                                                  ద
                                                                                                                                                        Š
                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                   Š
```

ö

; 0

9 9 240

240 300 300

360

120

180

180

ö

8 8 6

ዊ *የ*

유

8

ઠે

ò ద 8 8

셤

ઠે

a

8 g

ò

```
1467
                                                                                                                                                                                                                                                                                                                                                                        1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   733
                                                                                                                                                                                                                                                                                                                             493
                                                                                                                                                                                                                                                                                                                                                                                                                    553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       973
               The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The sequences may also be used to tag or identify an organism or its
                                                                                                                                                                                                                                                                                                                                                                      614 CCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGAAGAGAGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 674 GAGAAGAGAGAGAGAGAGAGAATGGGTTCGACCGGATCCGAGACCCAGATGACCCCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1768 CCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            794 CCCATGGTCCTCAAGGCCGCCATCGAGCTCGAGCTCCTCGAGATCATGGCCAAGGCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAGCTCCCGACACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     854 CCGGGCGTTCCTCTCCCCGGGGGAAGTCGCGGCCCAGGTCCCCGACCCCAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2008 AAGTICTIGGICAAGAACGAGGACGGGGICTCCAICGCCGCACTCAACTIGAIGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1034 AAGTICITGGICAAGAACGAGGACGGGGICTCCATCGCCGCACTCAACTIGAIGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1094 GACAAAATCCTCATGGAAAGCTGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1154 CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1214 AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1274 GAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGATCGATGTCGGAGGGGGGCCTTGGG
                                                                                                                                                                                                                                                                                    1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                               434 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGATTTTCTCTTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTTGCTCGAGGTCTCGCGGAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     734 CAAGTCTCGGACGAGGAGGAGGCGAACCTCTTCGCCATGCAGCTGGCGGGGGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1948 ACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              974 Accerecedeacerecedareceaagereaeceaececereraeecerraececedegereec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTC
                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                        ô
                                                                                                                                                                                           Length 2096;
                                                                                                                                                  Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                        8
                                                                                                                                                                                             3;
                                                                                                                                                                                             DB
                                                                                                                                                                                           Score 1255; DE
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                           Query Match
Best Local Similarity 99.5%;
Matches 1655; Conservative
                                                                                                         reproductive material
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1888
                                                                                                                                                                                                                                                                                                                                                                          1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2188
*******
                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGCCCTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                          GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTGTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel promoter sequences useful for modulating transcription of plant sequences of interest and production of polypeptides.
                                                                                                                                  ACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGGT
                                                                                                                                                                                                                        TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGCACTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                                                           AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTITIGAGICTICTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTITITGAGICTICIGCATACTGATTITCACAGAATGTGTAACGAAACGGCGTATATGGAT
                      CAGACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACA
                                                                                                         ACCCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGAT
                                                                                                                                                                                               TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA
                                                                                                                                                                                                                                                                                    CCGCTTGATCTGCTCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eucalyptus; pine; gene transcription; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       promoter coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENESIS RES & DEV CORP LTD. FLETCHER CHALLENGE FORESTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 61-62; 93pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ñ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-00276599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA; 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-FEB-2000; 2000WO-NZ000018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-647236/62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; AAB28142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200058474-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-MAR-1999;
30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Promoter;
                                                             2581
                                                                                                         2641
                                                                                                                                                  2641
                                                                                                                                                                                                                                                                                                                               2761
                                                                                                                                                                                                                                                                                                                                                                                                                      2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3061
                    2581
                                                                                                                                                                                             2701
                                                                                                                                                                                                                                        2701
                                                                                                                                                                                                                                                                                    2761
                                                                                                                                                                                                                                                                                                                                                                          2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAC62810;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAC62810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O-methyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GENE-)
(FLET-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAC 6281.T.
AAAC 6281.T.
AAAC AAAC 6281.T.
AAAC AAAC AAAC AAAC AAAC 6281.T.
AAAC AAAC AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAC 6281.T.
AAAAC 6281.T.
AAAAC 6281.T.
AAAC 6281.T.
AAAAC 6281.T.
AAAAC 6281.T.
AAAAC 6281.T.
AAAAC 6281.T.
AA
```

Lasham A;

g

ò 엄

셤 ð ò 셤

```
The invention relates to isolated promoter sequences from Pinus radiata and Bucalyptus grandis, comprising a sequence chosen from leaf-, root-, flower-, pollen-, bud-, meristem-specific promoters or temporally cegulated promoters such as xylogenesis-specific promoters. The promoter constructs such as xylogenesis-specific promoters. The promoter copypeptides and their related polywucleotides are useful in the promoter of genetic constructs, used for modifying ene expression in a ready of genetic constructs, used for modifying spression of a polywucleotide that comprises an intron compifying expression of a polywucleotide that comprises an intron compifying growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional coloning of genes, in various assays to determine biological activity, to cloning of genes, in various assays to determine biological activity, contained and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABKI/1015 represent Pinus radiate and Bucalybutus grandis nolymnelentials.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bucalyptus grandis polynucleotides and PCR primers used in the method
                                                                                                                                                                                                        Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.
                                                                                 GENESIS RES & DEV CORP LTD.
FLETCHER CHALLENGE FORESTS IND LTD.
                                                                                                                                                                                                                                                                           Claim 1; Page 78; 121pp; English
                                                                                                                                R, Rice S, Eagleton C,
20-JUN-2001; 2001WO-NZ000115
                                 20-JUN-2000; 2000US-00598401
28-NOV-2000; 2000US-00724624
                                                                                                                                                               WPI; 2002-114583/15.
P-PSDB; AAU80760.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                    GENE-)
                                                                                                     (FLET-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATACCAAGTTCTTCTCTAAAAGGAAACAATAAGAAGGGACTGTATGATGGCGCAAGTG 1933
                                                                                                                                                                                                                                                                                                                                                              1693
                                                                                                                                                                                                                                                                                                                                                                                                2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT 3027
                                                                       2427
                                                                                                                                     2487
                                                                                                                                                                                                  2547
                                                                                                                                                                                                                                 1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1813
                                                                                                                                                                                                                                                                   2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAGAATGTGTGTAAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAATTGTGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATACCAAGTTCTTCTCATAAAAGGAAACAATAAGAAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                           GAAGTTACAAGATTTGTTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
                                                                                                                                                                                                                                                                 TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                  TGATCCACATCGACTGCATCATGTTGGCCCCACACCCAGGCGGGAAAGAGAGACACAGA
                                                                                                                                                                                                                                                                                                                                                                                                AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTCATGGTTCTTGGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
        GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                         CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGT
                                                                                         TCGTCAGCGTTCCAAAGGGAAATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTG
                                                                                                                                                                                                  ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3028
                                                                                                         1394
                                                                                                                                                                                                        2488
                                                                                                                                                                                                                                                                                                                                                                                                    2668
                                                                                                                                                                                                                                                                                                                                                                                                                                    1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2054
                                                                          2368
                                                                                                                                           2428
                                                                                                                                                                                                                                                                      2548
                                                                                                                                                                                                                                                                                                                                       2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1934
```

g

g 8

a ò

ઠ

6 6 6 6 6

8 S

```
1467
                                                                                                                                                                                          1587
                                                                                                                                                                                                                                               1647
                                                                                                                                                                                                                                                                                                  1648 GAGAAGAGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACC 1707
                                                                                                                                                                                                                                                                                                                                                       CAAGICICGGACGACGAGGGGAACCICIICGCCAIGCAGCIGGGGAGGGCGCCICCGIGCIC 1767
                                                                                                                                                                                                                                                                                                                                                                                                            CCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGG 1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1828 CCGGGCGCTTCCTCTCCACGGGGAAATCGCGGCACAGGTCCCGACCCAGAACCCCGAG 1887
                                                                                                                                     1527
                                                                                                         493
                                                                                                                                                                                                                   613
                                                                                                                                                                                                                                                                                                                             733
                                                                                                                                                                                                                                                                                                                                                                                  793
                                                                                                                                                                                                                                                                                                                                                                                                                                         853
                                                                                                                                                                                                                                                                        673
                                                                                                                                                                                                                                                                                                                                                                                                                                    ccandarcicaladeccaccarcadecaccicacacacacacacacagg
                                                                                                                                                                                                                                                                                                                                                                        1588 CCCCACCATTTATCCGTTTTATTTCCTCGCTTTGCTCGCAAGAGA
                                                                                                                                                                                                                                                                       614 ccccaccatriarccentriaritccrccriticcriticcrcaagicrccaaaaaaa
                                                                                                                                   GGAGTCAATGGCATGCGTGACGAATGTACATATTGGGTGTAGGGTCCAATATTTTGCGGGA
                                                                                                                                                      GGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCATACCTCACTTCAAT
                                                                                                                                                                                                           GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                               ö
                            6; Length 2096;
Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                       8; Indels
                            Score 1255; DB
Pred. No. 0;
0; Mismatches
                               40.9%;
                                            Best Local Similarity 99.5
Matches 1655, Conservative
                                                                                                                                                                                                                                                                                                                                                              1708
                                                                                                                                                                                                                                                                                                                                                                                                                     1768
                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                    8
```

Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Bucalyptus grandis; ss;

Eucalyptus grandis. WO200198485-A1

primer

PCR.

27-DEC-2001

Eucalyptus grandis promoter polynucleotide #31.

(first entry)

26-MAR-2002

ABK17075;

ВР

ABK17075 standard; cDNA; 2096

g ò

```
1467
                               3027
                                                          2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1587
 1934 GAAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTT 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1588 CCCCACCATTTATCCGTTTTATTTCCTCTGCTTTGCTCGAGTCTCGCGGAAGAGA 1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ៧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to a new isolated polynucleotide comprising the Pinus radiata (Monterey pine) superubiquitin promoter sequence, its complement, reverse complement, reverse sequence or inverted repeat or sequence having at least 40, 60, 75 or 90% identity with the promoter. The polynucleotide is useful in modifying gene expression in a target organism, especially in transgenic plants. This sequence corresponds to superubiquitin promoter related sequence.
                               CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT
                                                1994 CACAGAATGTGTAAACGAAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         554 GGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    494 GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         434 GAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New polynucleotide of the superubiquitin promoter from Pinus radiata, useful in modifying gene expression in a target organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2096;
                                                                                                                                                                                                                                                                                                     ds; Monterey pine; superubiquitin; promoter; gene expression; transgenic plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Perera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1255; DB 10;
Pred. No. 0;
0; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Visser ES,
                                                                                                                                                                                                                                                                           Eucalyptus grandis superubiquitin related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; SEQ ID NO 60; 123pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GENE-) GENESIS RES & DEV CORP LTD.
(RUBI-) RUBICON FORESTS HOLDINGS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wood M, Eagleton CK,
                                                                                                                                                                                        вР
                                                                                                                                                                                        ADH75476 standard; DNA; 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                         30-APR-2003; 2003WO-NZ000076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-APR-2002; 2002US-00137036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 99.5%;
Matches 1655; Conservative
                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2003-903678/82.
                                                                                                                                                                                                                                                 (first
                                                                                                                                                                                                                                                                                                                                                     Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                WO2003093475-A1.
                                                                                                                                                                                                                                                 22-APR-2004
                                                                                                                                                                                                                                                                                                                                                                                                            13-NOV-2003
                               2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1468
                                                                                                                                                                                                                     ADH75476;
                                                                                                                                                            RESULT 6
ADH75476
                                                                                                                                                                                        셤
                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                        8
                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                              1947
                                                                                                      2007
                                                                                                                                  1033
                                                                                                                                                             2067
                                                                                                                                                                                                                     2127
                                                                                                                                                                                                                                                 1153
                                                                                                                                                                                                                                                                             2187
                                                                                                                                                                                                                                                                                                        1213
                                                                                                                                                                                                                                                                                                                                      2247
                                                                                                                                                                                                                                                                                                                                                                                               2307
                                                                                                                                                                                                                                                                                                                                                                                                                           1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                        2367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1753
                  913
                                                                                                                                                                                 AAGTTCTTGGTCAAGAACGAGGACGGGTCTCCATCGCCGCACTCAACTTGATGAACCAG
                                                                                                                                                                                                                                                                                                                                                     1574 TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCG
GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                               CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGACCCGCGATTC
                                                                                                                                                                                                                                                                                                                                                                                                               GAAACATACAAGGGCTTCGAGGGCCTCGAGACCCTGGTCGTTGTCGGGCGCGCACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCGTGCTCCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTTCGGCACTCACGTCATGCAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATACCAAGTTCTTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGTTACAAGATTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
                                              GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGC
                                                                         914 GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACCTGC
                                                                                                                                 ACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGC
                                                                                                                                                               AAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAG
                                                                                                                                                                                                                     GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                              CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTC
                                                                                                                                                                                                                                                                                                                                      AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTG
                                                                                                                                                                                                                                                                                                                                                                                             GAAACATACAAGGGCTTCGAGGCCTTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATCCACATCGACTGCATCATGTTGGCCCACAACCCAGGCGGAAAGAGAGACACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                    ACCCTCCGCGACCTCCCCGATGGCAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTCTAAGCACGTCGGAGGCGACATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                        1274
                                                                                                                               974
                                                                                                                                                            2008
                                                                                                                                                                                        1034
                                                                                                                                                                                                                                                                                                        1154
                                                                                                                                                                                                                                                                                                                                    2188
                                                                                                                                                                                                                                                                                                                                                                                               2248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2848
                                             1888
                                                                                                      1948
                                                                                                                                                                                                                     2068
                                                                                                                                                                                                                                                1094
                                                                                                                                                                                                                                                                                                                                                                 1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2908
                  854
                                                                                                                                                                                                                                                                              2128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                  음
                                                                     원
                                                                                                                      g
                                                                                                                                                                                 요
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                             ò
                                                                                                      ઠ
                                                                                                                                                         ઠે
                                                                                                                                                                                                             ठे
                                                                                                                                                                                                                                                                        ठ
                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
```

```
1454 '
                                                                                                                                                                                                                                                                                                       2668
                                                                                                                                                                                                                                                                                                                           1694
                                                                                                                                                                                                                                                                                                                                                                                                            1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1934 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2054
          2248
                                                  2308
                                                                                           2368
                                                                                                                                    2428
                                                                                                                                                                             2488
                                                                                                                                                                                                                      2548
                                                                                                                                                                                                                                                              2608
                                                                                                                                                                                                                                                                                                                                               2728
                                                                                                                                                                                                                                                                                                                                                                    1754
                                                                                                                                                                                                                                                                                                                                                                                        2788
                                                                                                                                                                                                                                                                                                                                                                                                                                 2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAA68014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAA68014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                   g
                                                                                                                                                                                               g
                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                     쉱
                                                                                                                                                                                                                                                                                                                                                                요
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                          원
                                                                 요
                                                                                     ठ
                                                                                                                                    à
                                                                                                                                                                            8
                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                ò
                                                                                                                                                                                      1467
                                                                                                                                                                                                                                                                          1587
                                                                                                                                                                                                                                                                                                                  1647
                                                                                                                                                                                                                                                                                                                                                         1707
                                                                                                                                                                                                                                                                                                                                                                                                   1767
                                                                                                                                                                                                                                                                                                                                                                                                                                            1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1213
                                                                                                                                                                                                                                 1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1033
                                                                                                                                                                                                            493
                                                                                                                                                                                                                                                     553
                                                                                                                                                                                                                                                                                                                                                                                                                       793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 973
                                                                                                                                                                                                                                                                                             613
                                                                                                                                                                                                                                                                                                                                      673
                                                                                                                                                                                                                                                                                                                                                                              733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 853
caffeic acid O-methyltransferase (cOMT) promoter (ADW80462 or ADW80563). Also claimed is a genetic construct comprising the above polymucleotide sequence or a sequence having 2096 base pairs fully defined in the specification (ADW80510), a host cell comprising the above genetic construct, a plant comprising the genetic construct, a method for producing a plant with modified gene expression, and a method for identifying a gene responsible for a desired function or phenotype. The composition and methods are useful for modifying gene expression or for modifying the transcription of endogenous and/or heterologous polymucleotides involved in wood formation. The present sequence is used
                                                                                                                                                                                                                                                                                                                                                                                                   CAAGTCTCGGACGACGAGGGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGGGGGAATC
                                                                                                                                                                                                 GGAGTCAATGGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGA
                                                                                                                                                                                                                                                                                     GGGTTGGTGAAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAAT
                                                                                                                                                                                                                                                                                                                  CCCCACCATTTATCCGTTTTATTTTCCTTTTCCTTTTCCTTTGCTCGAGTCTCGCGGAAGAGA
                                                                                                                                                                                                                                                                                                                                                          GAGAAGAGGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCCAGATGACCCCGGACC
                                                                                                                                                                                                                                                                                                                                                                       GAGAAGAGGAGGAGGAGAGAATGGGTTCGACCGGATCCGAGACCCAGATGACCCCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGGGCGTTCCTCTCCACGGGGAAATCGCGGCACAGGTCCCGACCCAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACCCGTCATGCTCGCCCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          accerecededecrecedaredeaaegredageedereracederradeecedagee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                 GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGA
                                                                                                                                                                                                                                                                          GGGTTGGTGAACCGCAAAGTTCCTATATATGGAACCTCCACCACCATACCTCACTTCAAT
                                                                                                                                                                                                                                                                                                                                      ccccaccarrrarccerrrrarrrccrcrecrrrccrrrrccrccagacrcrcccaaga
                                                                                                                                                                                                                                                                                                                                                                                                                      cecandencenchadedececandadencencencencandececandedece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCCTCCGCGACCTCCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTTAGCGCCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gарв
                                                                                                                                                                   o;
                                                                                                                                              Length 2096;
                                                                                                                          Sequence 2096 BP; 537 A; 535 C; 539 G; 485 T; 0 U; 0 Other;
                                                                                                                                                                   8; Indels
                                                                                                                                               DB 14;
                                                                                                                                                                    0; Mismatches
                                                                                                                                              Score 1255;
Pred. No. 0;
                                                                                                      the exemplification of the invention.
                                                                                                                                              Query Match
Best Local Similarity 99.5%;
Matches 1655; Conservative
                                                                                                                                                                                       1408
                                                                                                                                                                                                                                                    464
                                                                                                                                                                                                                                                                          1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1214
                                                                                                                                                                                                                                 1468
                                                                                                                                                                                                                                                                                             554
                                                                                                                                                                                                                                                                                                                  1588
                                                                                                                                                                                                                                                                                                                                                           1648
                                                                                                                                                                                                                                                                                                                                                                                                    1708
                                                                                                                                                                                                                                                                                                                                                                                                                                            1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1154
                                                                                                                                                                                                            434
                                                                                                                                                                                                                                                                                                                                      614
                                                                                                                                                                                                                                                                                                                                                                              674
                                                                                                                                                                                                                                                                                                                                                                                                                        934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          854
                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 6 6 6
 d
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                               පු
                                                                                                                                                                                                                                                                                                                                                        8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                  8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 & 8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 &
                                                                                                                                                                                       ò
                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                         &
```

```
2547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2787
2307
                                       1333
                                                                               2367
                                                                                                                         1393
                                                                                                                                                                   2427
                                                                                                                                                                                                          1453
                                                                                                                                                                                                                                                    2487
                                                                                                                                                                                                                                                                                                1513
                                                                                                                                                                                                                                                                                                                                                                                  1573
                                                                                                                                                                                                                                                                                                                                                                                                                          2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2053
                                                                                                                                                                                                                                                    1394 CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGAGGCGACATGT
                                                                                                                                                                                                                                                                                                                                                              TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTCATGGTTCTTGGATTTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATACCAAGTTCTTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATACCAAGTTCTTCTTCATAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAGTTTACAAGATTTGTTGTTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1994 CACAGAANGNGAAACGAAAACGCGTATATAGATGTGCCTGAATGATGATGATTGTGATAT
                                                                                                            ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATCCACATCGACTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGAGAGACACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACAGAATGTGTAAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT
GAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGG
                                                                                                                                                                   CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGT
                                                                                 GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plant, lignin, lignin biosynthetic pathway, Eucalyptus grandis;
Pinus radiata; Monterey pine; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rcrercricitriricagiaaarcacricgaacaaaaaaaaa 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO:107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eucalyptus grandis OMT nucleotide sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard; DNA; 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-OCT-2000
```

2402

803

2462

2522

863

```
GATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCA 2582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGTGGATATGCCATGACTGGACTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC 923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1284 AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1044 CCAGGCGGGGAAAGAGAGACACAGAAGGGGTTCGAGGCATTGGCCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITIGAGICITCIGCATACIGATITICACAGAAIGTGAACGAAACGGCGTAIATGGAIGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1344 TTTTGAGTCTTCTGCATACTGATTCACAGAATGTGTAACGAAACGGCGTATATGGATGT
      ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTG
                                                                                                                                                           AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGGCTTCCCAAGTCCTGCGCTCTTCGGCACTCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    écritéarcrecreteregréaréricarégricirégaririeaaageregréaagea
                                                      624 ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGGACCGTG
                                                                                                                                                                                                                                          ATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGT
                                                                                                                                                                                                                                                                                       Argadaggarchactrcaccrcaccrcacrcaccrcacrcrcacrcrcacr
                                                                                                                                                                                                                                                                                                                                                       GTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG
                                                                                                                         GTCGATGTCGGAGGCGGCACTGGGCCCGTGCTCAGCATGATCGTTGCCAAATACCCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ds; plant; lignin content; lignin composition; lignin structure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O-methyl transferase DNA #13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADD41764 standard; DNA; 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3063 A 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1464 A 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           924 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADD41764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2643
                  2224
                                                                                                                                  2284
                                                                                                                                                                                                                                                   2344
                                                                                                                                                                                                                                                                                                         744
                                                                                                                                                                                                                                                                                                                                                                   2403
                                                                                                                                                                                                                                                                                                                                                                                                                          804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZXZXZXZXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                            셤
                                                                                                                               ò
                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention describes isolated polynuclectides and proteins encoding and representing the enzymes cinnamate 4-hydroxylase (CAH), condurante 3-hydroxylase (CAH), pencelable, 0-methyl transferase (CMT), cinnamyl alcohol dehydrogenase (CAD), cinnamoyl-COA reductase (CMT), cinnamyl alcohol dehydrogenase (CAD), cinnamoyl-COA reductase (CCR), phenylalanine ammonia-lyase (PAL), 4-coumarate:COA ligase (4CL), conferol glucosyl transferase (CGT), coniferin beta-glucosidase (CBG), coniferol glucosyl transferase, caffeoyl COA methyl transferase, caffeoyl COA methyl transferase, caffeoyl COA methyl transferase, caffeoyl COA methyl transferase, inventor are involved in the lignin biosynthetic pathway. The polynucleotides can be used for modulating lignin content, lignin composition and the structure of a plant, especially eucalyptus and pine species, and for modifying the producing a plant having altered lignin content, composition and correcting similar DNA and RNA sequences in any organism and for producing a plant having altered lignin content, composition and correcting similar DNA and RNA sequences in any organism and for PCR amplification. The lignin content can be efficiently modified using the polynucleotides and protein sequences used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGCACTCAACTTGATGAACCAGGACAAATCCTCATGGAAAGCTGGTATTACCTGAAA 2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             324 GCCAGCTACTCCGTGCTCACCTCCCCCCGCGACCTCCCCGATGGCAAGGTCGAGCGG 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel polyncleotide encoding enzymes involved in lignin-biosynthetic pathway useful for producing transgenic plants especially eucalyptus ar pine species having altered lignin content, composition and structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cascrecearceragalecesassearcestearseresasseses caseres estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                crcracescrraececcescrerecaagricrresrcaagaceaesacescrerecare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATCATGGCACCGGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCAGCTACTCCGTGCTCACGTGCACCTCCCCCGATGGCAAGGTCGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 3; Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1630 BP; 394 A; 433 C; 439 G; 364 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25.2%; Score 774; DB
ilarity 99.4%; Pred. No. 0;
Conservative 0; Mismatches
                                                                                                                                                                                                                                                            GENESIS RES & DEV CORP LTD.
FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 90-91; 213pp; English
                                                                                                             99WO-NZ000168
                                                                                                                                                                    98US-00169789
99US-0143811P
                                                                                                                                                                                                                                                                                                                                                 Bloksberg LN, Havukkala IJ;
                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-317962/27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
WO200022099-A1
                                                                                                                                                                          09-OCT-1998;
                                                                                                                06-OCT-1999;
                                                                                                                                                                                                     14-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Simi
Matches 1194;
                                                      20-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                            GENE-)
                                                                                                                                                                                                                                                                                             (FLET-)
```

3062

1463

g

à

셤 ò g ò g ð

ò

2882 1283

2702

1103

2642

983

2762 1163 2822 1223

```
2462
                                                                                                                                                                                                        2522
                                                                                                                                                                                                                                                                                2582
                                                                                                                                                                                                                                                                                                                                                       2642
                                                                                                                                                                                                                                                                                                                                                                                          1043
                                                                                                                                                                                                                                                                                                                                                                                                                                 2702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1104 cadddcriccaadrcardracacridcacrircadcacricacardaagacriccrdaagacc 1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTGAATGATGGAAATTGTGATATTCTGTCTTCTTTTCAGTAAATCACTTCGAACAAA 3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1404 GCCTGAATGATGGAAATTGTGATATTCTGTCTTCTTTTCAGTAAATCACTTCGAACAAA 1463
                                                                                                                                                                    863
                     743
                                                                                                                                                                                                                                           923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transcription ; xylogenesis; gene expression ; transgenic plant; lignin cellulose; wood ; disease resistance; caffeic acid 3-0-methyl transferase promoter; COMT promoter ; xylem; ds
GTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG
                                                                                                                                                    <u>AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1164 GCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTTCATAAAAGGAAACAATAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1224 GCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTGTATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAAC
                                                                                                                                                                                                                                                                                                                                                                                          GACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAAC
                                                                                          744 ATGADAGGGATCAACTTCGACCTGCCTCACGTGATTGAAGACGCTCCACCCCTTCCTGGT
                                                                                                                                                                                                                              1044 CCAGGCGGAAAGAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCA
                                                                                                                                                                                                                                                                                                                 GATGCCCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTTGAAAGGTCGTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eucalyptus grandis COMT promoter #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADQ88319 standard; DNA; 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US2004146904-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3063 A 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-OCT-2004
                                                                                                                                                                                                                                               864
                                                                                                                                                                                                                                                                                                                     924
                                                                                                                                   2403
                                                                                                                                                                                                          2463
                                                                                                                                                                                                                                                                                  2523
                                                                                                                                                                                                                                                                                                                                                         2583
                                                                                                                                                                                                                                                                                                                                                                                                                                   2643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1464
                         684
                                                                                                                                                                      804
                                                                                                                                                                                                                                                                                                                                                                                              984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BXSXAXAXAXAX
                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                         ò
                                                                                          셤
                                                                                                                                 ò
                                                                                                                                                            ద
                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2284 GTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCA 2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to an isolated polynucleotide. The polynucleotides, polypeptides and genetic constructs are useful for modulating lignin content, composition and structure of plants, or for producing a plant having altered lignin content, composition and structure. The polynucleotides are also useful in genome mapping, physical mapping, positional cloning of genes, or as non-distruptive tags for marking organisms, particularly plants. The present sequence represents a polynucleotide associated with the lignin biosynthetic pathway.
                                                                                                                                                                                                                                                                                                                                                                                                                               New polynucleotide associated with the lignin biosynthetic pathway, for modulating lignin content, composition and structure of plants, or producing a plant with altered lignin content, composition and structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATCATGGCACCGGCGGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCTCCCGACCCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCTCCCGACCCGAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCTACGGCTTAGCGCCGGTGTGCAGTTCTTGGTCAAGAACGAGGACGAGGGCTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCATGGCACCCGCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10; Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1630 BP; 394 A; 433 C; 439 G; 364 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 774;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; SEQ ID NO 107; 206pp; English.
                                                                                                                                                                                     96US-00713000.
97US-00975316.
98US-00169789.
99US-0143833P.
2000US-00615192.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25.2%;
                                                                                                                                                    18-JUN-2002; 2002US-00174693
                                                                                                                                                                                                                                                                                                                                                           Bloksberg LN, Havukkala I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 1194; Conservative
                                                                                                                                                                                                                                                                                                   BLOKSBERG L N.
HAVUKKALA I.
     lignin biosynthesis;
                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2003-829606/77
                                        Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                             US2003131373-A1
                                                                                                                                                                                                       21-NOV-1997;
09-OCT-1998;
14-JUL-1999;
12-JUL-2000;
                                                                                                                  10-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                   (BLOK/)
(HAVU/)
```

g

ò

8 8 8 8 8

ò

엄

ઠે

음 상 음

ઠે

```
RESULT 11
              ADQ88320
                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1230 AGAGCACGACCTTTCCTTAACAAGATCATCACCAGATGGCCAGTAAGGGTAATA 1289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTCCTCTCCACTTCCATAAACCC 1349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGAGAGAGAGAGAGAGAGAGAGAGATTTTCTCTCTTTTTTTCTCTGGTTCACCGGTTGG 1469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1110 ATGCGCCATGTTGACAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTG 1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGG 1529
                                                                                                                                                                                                                                                                                             The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymuclectides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lighin biosynthetic gene and thereby alter the lighin content in plants, to modify properties such as cellulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-0-methyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAGCACGACCCAACCTTTCCTTAACAAGATCACCAGATCGGCCAGTAAGGGTAATA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                         New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 TTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACACTTCCATAAACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAGGTCAGATGTCATCCCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crgarraarrragraggaaagcgacagccaacccacaaaagcrcagargrcarccacga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTIGGIGAACCGCAAAGTICCIAIAIATCGAACCICCACCACCATACCTCACTICAAICC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GriggigaAccecaAagricciaTaTaTceaAcciccAccACCATACCTCACTICAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arececcaretreacaaaaaeecrearraerarearcrreeaerrerreaaarrre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCACCATTTATCCGTTTTATTTCCTCTCCCTTTGCTCGAGTCTCGCGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481 CCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 534;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 534 BP; 151 A; 126 C; 119 G; 138 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 534; DB 13; Lengtu 5.; Pred. No. 2.2e-259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17.4%; Scor.
100.0%; Pred. No. 2...
'... 0; Mismatches
                                                                                                                                                                                                                                                                   Claim 1; SEQ ID NO 1; 32pp; English
                  07-NOV-2003; 2003US-00703091
                                                     21-NOV-2002; 2002US-0428087P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 534; Conservative
                                                                                                                           Phillips J, Eagleton
                                                                                          (ARBO-) ARBORGEN LLC
                                                                                                                                                              WPI; 2004-552666/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in a plant cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1170
```

g ò 유 ે g 8 g ò

셤 ò 셤 8

```
1219 AAAGAGGACAAAAGAGCACGACCCATTCCTTAACAAGATCATCACCAGATCGGCCAG 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1279 TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymorlectides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lignin blosynthetic gene and thereby alter the lignin content in plants, to modify properties such as callulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-0-methyl transferse (COMT) promoter that confers xylem-preferred gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cellulose; wood; disease resistance; callulose; wood; disease resistans caffeic acid 3-0-methyl transferase promoter; COMT promoter; xylem; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 AAAGAGCACAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1339 TCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCCACAAAAGGTCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GIGCAAATITICCAAGCIGACGAIGCCCCCTCAGGGAAATITAAGGCGCCAACCCAGATIGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Transcription; xylogenesis; gene expression; transgenic plant; lignin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1159 GIGCAAATTIGCAAGGIGACGAIGGCCCCICAGGGAAATIAAAGGCGCCAACCCAAGAIIGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 485 BP; 138 A; 120 C; 105 G; 122 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0, Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15.8%; Score 485; DB 13; L
100.0%; Pred. No. 1.5e-234;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 2; 32pp; English
                                                                                                                                                                                                     Eucalyptus grandis COMT promoter
   BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-NOV-2003; 2003US-00703091.
ADQ88320 standard; DNA; 485
                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           485; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (ARBO-) ARBORGEN LLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2004-552666/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 485; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                           Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US2004146904-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in a plant cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Phillips J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JUL-2004.
                                                                                                                                          21-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                        ADQ88320;
```

1398

셤

ò

180

120

9

240

ö

9

1338 TTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCAAAAAGGTCAGAT

1 Trccataaaccccrgartaartrggrgggaaagcgacagccaacaaaaggrcagar

61 1458

용

ઠે

ò

셤 ò 원 ò g

ò g

120

ö

;

Indels

Pred. No. 7.7e-144; Mismatches

; 0

Matches 306; Conservative

Best Local Similarity

100.0%;

1577

240

300

180

1578 TCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTC 1637

241 TCACTTCAATCCCCACCATTTATCCGTTTATTTCCTCTGCTTTCCTTTGAGTCTC

1638 GCGGAA 1643

301 GCGGAA 306

TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTGAGGTCCAATA 1517

1518 TTTTGCGGGAGGGTTGCTGAACCGCAAAGTTCCTATATATCGAACCTCCACCATACC

```
1518
                                                                                                                                  1578
                                                                                                                                                                                                     1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymucleorides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of lighin biosynthetic gene and thereby alter the lighin content in plants, to modify properties such as cellulose synthesis, wood development, flower development and disease resistance. The present sequence is Eucalyptus grandis caffeic acid 3-0-methyl transferase (COMT) promoter that confers xylem-preferred gene expression
                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cells undergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transcription; xylogenesis; gene expression; transgenic plant; lignin; cellulose; wood; disease resistance; caffeic acid 3-0-methyl transferase promoter; COMT promoter; xylem; ds.
                   TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                     TTTGCGGGGGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCACATACCT
                                                                                                                                                                                                                        CACTTCAATCCCCACCATTAATCCGTTTTATTTCCTCTGGTTTTCCTTTGCTCTCG
TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTTAGGTCCAATAT
                                                                                                                                  TTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCT
                                                                                                                                                                                                     CACTICAAICCCCACCAITIAICCGITITIAIIICCICCIGCITICCITIGCICGAGICICG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eucalyptus grandis COMT promoter #3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; SEQ ID NO 3; 32pp; English.
                                                                                                                                                                                                                                                                                                                                                                                          ADQ88321 standard; DNA; 306 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-NOV-2003; 2003US-00703091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-NOV-2002; 2002US-0428087P
                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (ARBO-) ARBORGEN LLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2004-552666/53.
                                                                                                                                                                                                                                                                      CGGAA 1643
                                                                                                                                                                                                                                                                                                       CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US2004146904-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Phillips J,
                                                                  1459
                                                                                                                                  1519
                                                                                                                                                                                                     1579
                                                                                                                                                                                                                                                                       1639
                                                                                                                                                                   361
                                                                                                                                                                                                                                    421
                                 241
                                                                                                  301
                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                          RESULT 12
                                                                                                                                                                                                                                                                                                                                                                            ADQ8832;
                                                                                                                                                                g
                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                       g
                                                                                                                              ò
                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                      ઠ
                                                                 ò
```

```
The invention relates to promoter sequences from Eucalyptus grandis that is capable of initiating and promoting transcription of polymucleotides in plant cells undergoing xylogenesis. The invention also provides DNA construct comprising the promoter and a desired nucleic acid, which can be used for regulating gene expression in a transgenic plant. The DNA constructs comprising the promoter sequences of the invention can be used to regulate the expression of light hiosynthetic gene and thereby alter the light to content in plants, to modify properties such as cellulose synthesis, wood development, flower development and disease resistance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cells
                                                                                                                                                                            Transcription; xylogenesis; gene expression; transgenic plant; lignin; cellulose; wood; disease resistance; caffeic acid 3-0-methyl transferase promoter; COMT promoter; xylem; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New isolated polynucleotide from Eucalyptus grandis that is capable of initiating and promoting transcription of polynucleotides in plant cellundergoing xylogenesis, useful in altering lignin content of plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; SEQ ID NO 4; 32pp; English.
                                                                                                                                           Eucalyptus grandis COMT promoter #4.
                                                                                                                                                                                                                                                                                                                                                             07-NOV-2003; 2003US-00703091.
                                                                                                                                                                                                                                                                                                                                                                                                21-NOV-2002; 2002US-0428087P
                                   ADQ88322 standard; DNA; 293
                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eagleton
                                                                                                                                                                                                                                                                                                                                                                                                                                    (ARBO-) ARBORGEN LLC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2004-552666/53.
                                                                                                                                                                                                                                                     Eucalyptus grandis.
                                                                                                                                                                                                                                                                                        US2004146904-A1.
                                                                                                          21-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Phillips J,
                                                                      ADQ88322;
RESULT 13
```

DB 13; Length 306;

Score 306;

10.0%;

Query Match

Sequence 306 BP; 80 A; 73 C; 70 G; 83 T; 0 U; 0 Other;

a plant cell

ö

Gaps ., 0 1295

277

217

157

```
AATTIGGIGGGAAAGCGACGAACCCACAAAAGGTCAGAIGTCATCCCACGAGAGAGA 1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to isolated promoter sequences from Pinus radiata and Eucalyptus grandis, comprising a sequence chosen from leaf-, root-, flower-, pollen-, bud-, meristem-specific promoters or temporally regulated promoters such as xylogenesis-specific promoters. The promoter polypeptides and their related polynucleotides are useful in the
                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel polynucleotide promoter sequences from Pine and Eucalyptus useful for modifying expression of endogenous and/or heterologous polynucleotides in transgenic plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Promoter; pine; leaf; root; flower; pollen; bud; meristem; xylogenesis; temporally regulated promoter; Pinus radiata; Bucalyptus grandis; 88;
                                                                                                                                                                                                                                                                                                                              TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACATCCCATAAACCCCTGATT
                                                                                                                                                                                                                                                                           1116 CATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                                                                                                                                                                 1176 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCA
                                                                                                                                                                                          1236 CGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATATTAATT
                                                                                                                      98 CATGTTGACAAAAAGGCTGATTAGTATGATCTTCTGGAGTTGTTGGTGCAAATTTGCAAGGCT
      Length 661;
                                                1; Indels
        8.9%; Score 272; DB 3; I
99.7%; Pred. No. 1.3e-126;
iive 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eucalyptus grandis promoter polynucleotide #6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GENE-) GENESIS RES & DEV CORP LTD.
(FLET-) FLETCHER CHALLENGE FORESTS IND LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lasham A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Page 63-64; 121pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGAGAGAGAGAGAGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eagleton C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20-JUN-2000; 2000US-00598401.
28-NOV-2000; 2000US-00724624.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-JUN-2001; 2001WO-NZ000115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABK17027 standard; cDNA; 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                    al Similarity 99.7 322; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2002-114583/15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rice S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200198485-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCR primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Perera R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABK17027;
                                                                                                                                                                                                                                                                                                  218
                                                                                                                                                                                                                                                                                                                                                                                                                         1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              398
                                                                                                                                                                                                                                                                                                                                           1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1416
                                                                                                                                                                                                                                                                                                                                                                                   278
                     Query Match
                                          Best Local
                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABK17027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                  ઠ
                                                                                                                                                                                                       1410
                                                                                                                                                                                                                                                                                      1470
                                                                                                                                                                                                                                                                                                                                                                  1530
                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACACCATACCTCCAATCCC 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to promoter sequences from eucalyptus and pine. The present sequence is one such promoter. This sequence is useful for modulating the transcription of DNA sequences of interest. The sequences may also be used to tag or identify an organism or its reproductive material
                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               plant DNA
                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                             09
The present sequence is Bucalyptus grandis caffeic acid 3-0-methyl transferase (COMI) promoter that confers xylem-preferred gene expression
                                                                                                                                                                                                                                                                                                                     GTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                        1351 TGATTAATTTGGTGGGAAAGCGACAACCCAACAAAAAGGTCAGATGTCATCCCACGAG
                                                                                                                                                                                                                            1411 AGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 TIGGTGAACCGCAAAGTTCCTATATAGAACCTCCACCACCATACTCACTTCAATCCC
                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACCATTTATCCGGGAATTCCCTCTGCTTTGCTCGAGTCTCGCGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel promoter sequences useful for modulating transcription of sequences of interest and production of polypeptides.
                                                                                                                                                                   .;
0
                                                                                                                      9.5%; Score 293; DB 13; Length 293; 100.0%; Pred. No. 3e-137; ive 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;
                                                                                  Sequence 293 BP; 76 A; 67 C; 70 G; 80 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Promoter; eucalyptus; pine; gene transcription; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O-methyl transferase promoter coding sequence #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GENE-) GENESIS RES & DEV CORP LTD.
(FLET-) FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eagleton CK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Page 48; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99US-00276599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-FEB-2000; 2000WO-NZ000018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAC62762 standard; DNA; 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                    Best Local Similarity 100.
Matches 293; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Perera R, Rice SJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-647236/62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eucalyptus grandis.
                                                  in a plant cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200058474-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAC62762;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                      Н
                                                                                                                                                                                                                                                                                                                                                                             1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1591
                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAC62762

IID AAC6

IID AAC6

IID AAC6

AC AAC6

AC AAC6

AC AAC6

AC AAC6

AC AAC6

AC AAC6

AC AAC6

AC AAC6

AC AAC6

AC ACC6

AC ACC6

AC ACC6

AC ACC6

AC ACC6

AC ACC6

AC ACC6

AC ACCCC

AC ACC6

AC ACCCC

AC ACC6

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC ACCCC

AC AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
              និត្តនិត្ត
                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                윤
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                              8
```

```
production of genetic constructs, used for modifying gene expression in a target organism, in particular a plant. The method is useful for modifying expression of a polynucleotide that comprises an intron sequence, through removal of the intron sequence. The method is useful for modifying growth and development of plants, and cellular responses to external stimulus, such as environmental factors and disease pathogens. The sequences are useful in genome and physical mapping, in positional cloning of genes, in various assays to determine biological activity, to raise antibodies, to isolate corresponding interacting proteins and other compounds, and to quantitatively determine levels of interacting proteins or other compounds. Sequences ABK17016-ABK17125 represent Pinus radiata and Bucallyptus grandis polynucleotides and PCR primers used in the method of the invention
```

Sequence 661 BP; 192 A; 145 C; 150 G; 174 T; 0 U; 0 Other;

Ouery Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches Matches	Query Match Best Local Similarity 99.7%; Pred. No. 1.3e-126; Matches 322; Conservative 0; Mismatches 1; Indels 0; Gaps 0;	16 CATGITGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGGGCAATTTGCAAGCT 1175	98 CATGITGACAAAAAGGCIGAITAGIAIGAICIIGGAGIIGIIGGIGCAAAIIIGCAAGCI 157	76 GACGATGGCCCTCAGGGAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCA 1235		36 CGACCCCAACCTTTCCTTAACAAGATCATCACCAGTCGGCCAGTAAGGGTAATATT 1295	18 CGATCCAACCTTCCTTAACAAGATCACCAGATCGGCCAGTAAGGGTAAGATTAATT 277	96 TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACACCCTCATAAACCCCTGATT 1355	78 TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATT 337	56 AATTIGGIGGGAAAGCGACAGCCAACCCACAAAAGGICAGAIGICAICCCACGAGAGA 1415	38 AATTTGGTGGGAAAGCGACGACCAAAAGGTCAATGTGTTCCCACGAGAGAG 397	16 GAGAGAGAGAGAGAGAGAG 1438	98 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
	Query Match Best Local Matches 32	y 1116		1176	5 158	y 1236	5 218	у 1296	b 278	y 1356	338	y 1416	398

Search completed: November 1, 2006, 14:35:38 Job time : 2758 secs

THIS PAGE LEFT BLANK

	37 37 37 36 11.2 36 11.2 36 11.2	36 1.2 36 1.2 36 1.2 36 1.2	36 36 36 36 36 36 36 37 37	36 1.2 36 1.2 36 1.2	RESULT 1 CB967579 LOCUS DEFINITION egx18a09_F Differen egx18a09_F, mRNA: ACCESSION CB967579 VERSION CB967579 G1:302; KEYWORDS SOURCE Bucalyptus grandis ORGANISM Eukaryotus, Viridip) Spermatophyta; Magip	REFERENCE 1 (bases 1 to 344) AUTHORS Kirst,M.1 Sederoff,R. TITLE Gene Discovery in 1 JOURNAL Unpublished (2003) COMMENT CONTACT: Kirst, Mat NCSU Tel: 919 513 0015		Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calone 111 //Calon
00	0 000 0			0 0	RESUL CB967 CB967 LOCUS DEFIN ACCES. VERSI VERSI ORGY	COO	PB2	ORI
n 5.1.9 Biocceleratic	11:19:04 ; Search time 13810 Seconds (without alignments) 12431.017 Million cell updates/sec	.0 5780 residues	n parameters: 176473	summaries		predicted by chanc score of the resul ctal score distrib RIES	D	
93.6	, E 8	Gapext 60.0 (s, 27959665780	ing chosen	000	. **** **** *** ***	of ual	DB + 4 1 1 1 1 4 8 1 1 1 1 1 1 1 1 1 1 1 1 1	111111111111111111111111111111111111111
Copyrigh	November 1, 2006, 11: US-10-702-319A-113 3070	1 e e	20 lits satisfying	ngth: ngth: Listin	EST:* 2:	s the numbe er than or ved by anal	4atch Length 8.0 1.3 724 1.3 724 1.3 430 1.2 636 1.2 584 1.2 584 1.2 584 1.2 584 1.2 584 1.2 584 1.2 584 1.2 584 1.3	üüüüüüüüüü
onu -	score:	cable:	e: mber of h	DB seq les DB seq les ocessing:		. No. e grea is der	20 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
OM nucleic	Run on: Title: Perfect (Scoring Searched	Word size Total numbe	Minimum DB seq Maximum DB seq Post-processing	Database	Pr. sc. and Result	N	0 0 0 0 11 12 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15

2 CG437396 CG437396 OCTAW19TV DR927169 BST111870 DR927169 BST111870 DV515649 ZW RPh020		CC338168 DW346376	AG341087	AZ553282 BZ200330	BP951387	AZ349069 CF115975	BH104269	AZ411376	BH494868	CE595874	DU485968 BM397420	2 CC956670 1 AZ428757 BJ749391	ALIGNMENTS		344 bp mRNA linear EST 29-APR. Differentiating xylem Eucalyptus grandis cDNA clone	sequence.	9714		Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Epsematophyta, Magnoliophyta, eudicotyledons, core eudicotyledons, Matholiophyta, North Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of th	Traceac, mountpens Gurdel G.P., Myburg A.A., Whetten R. and		Bucalyptus grandis Xylem tias		.ncsy.edu	nalifiers	 .344 /organism="Bucalyptus grandis" /mol_type="mRNA" /db_xref="taxon;11139" /clone="eqx18a09" /tissue_type="Differentiating Xylem" 	="Adult (8 years)" "XL1-Blue"		otype, growing in Florida, collected in the of October."
1.2 744	.2 790 .2 826 .2 826	1.2 930	1.2 1195	1.2 146	1.2 342	1.2 367	1.2 450	1.2 477	1.2 530	1.2 546	1.2 559				щ	•	CB967579.1 GI:3022971 RST	Est. Eucalyptus grandis Eucalyptus grandis	Eukaryota, Viridipl Spermatophyta, Magn	1 (bases 1 to 344) Kirst M. Kirst M.E	•	Discovery in blished (2003) act: Kirst, Ma	NCSU Tel: 919 513 0015	mail: mkirst		1344 /organism= /mol_type= /db_xref== /clone="eg /tissue_ty	/dev_stage /lab_host=	/clone_lib /note="Vec XhoI; The	single gen beginning
	2 2 2 2 4 R		78		35		35	37	38	40	41			RESULT 1	NO	NO	VERSION (Σ		REFERENCE 1		TITLE JOURNAL U			FEATURES	Bource			ORIGIN

; 0

g

ઠે 셤 ઠે

g

셤 ð

à

```
ENKARYCHE MCTORDATE, Craniate, Vertebrate, Euteleostomi;
ENKARYCHE, Metazoa; Chordate, Craniate, Vertebrate; Euteleostomi;
Mammalia, Eutheria, Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Murinae; Rattus.

GE 1 (bases 1 to 430)

Rigas, Shetty, J., Shatsman, S., Tsegaye, G., Geer, K.,
Rigas, F., de Jong, P. and Fraser, C.M.
Rat BAC End Sequences from Library CHORI-230 ECORI segment
Rat BAC End Sequences from Library CHORI-230 ECORI segment
Unpublished (1999)

Other GSSs: CH230-152B20.TJB
COnteact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institute for Genomic Research
The Institut
                                                                                                                                                                                                                                                                                                                                                                                                                                  GSS 10-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cell type="Brain"
/clone_lib="CHORI-230 Segment 1"
/note="Vector: PTARBAC2.1; Site_1: EcoRI; Site_2: EcoRI;
/note="Vector: PTARBAC2.1; Site_1: EcoRI; Site_2: EcoRI;
Ploter to Jong"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (http://www.chori.org/bacpac/or ering information.htm). BAC end page: http://www.tigr.org/tdb/bac_ends/rat/bac_end_intro.html plate: http://www.tigr.org/tdb/bac_ends/rat/bac_end_intro.html plate: http://www.tigr.org/tdb/bac_ends/rat/bac_end_intro.html cag primer: T7 class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                     430 bp DNA linear GSS 10-OCT-CH230-152B20.TVB CHORI-230 Segment 1 Rattus norvegicus genomic clone CH230-152B20, genomic survey sequence.
BZ103309.1 GI:23744188
GSS 10-OCT-CH230-152B20, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
size-selected to contain the 0.5-3 kb size fraction."
                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
0
                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 430;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                             Length 724;
                                                                                                                                                             Indels
                                                                                                                                                                                                                    2439 CCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGA 2479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240 CCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
1.3%; Score 39; DB 11; I
Best Local Similarity 100.0%; Pred. No. 5.6e-09;
Matches 39; Conservative 0; Mismatches 0;
                                                                                             Query Match
1.3%; Score 41; DB 4; Le
Best Local Similarity 100.0%; Pred. No. 4.6e-10;
Matches 41; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Rattus norvegicus"
/mol_type="genomic DNA"
/strain="BN/SsNHsd/MCW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db xref="taxon:10116"
/clone="CH230-152B20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /sex="Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                            RESULT 3
BZ103309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                      DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     / wex="nermegnicolicus"
/ dev stage="Berry stage I"
/ lab_host="BhSalpan"
/ lab_host="BhSalpan"
/ clone lib="Cabbernet Sauvignon Berry Stage I - CAB3"
/ clone lib="Cabbernet Sauvignon Site 1: Sfi1; Site 2:
/ note="Organ: Berry; Vector: pDNR; Site 1: Sfi1; Site 2:
/ note="Organ: Berry; Vector: pDNR; Site 1: Sfi1; Site 2:
Sgi1; CAB3 is a cDNA library of Vitis vinifera 'Cabarnet
Sauvignon' clone 8 herries. Samples were collected after
berry set from field-grown vines during stage I of berry
growth, 17 days after full bloom. The average berry size
was 6 milimeters. Sampled vines were located at the
University of California, Davis, Experimental Vineyard,
cloned 5 and 3' adaptors were used in cloning as follows:
5'-AAGCAGGGGGGGGGGCGAGGGGCCAGGG3' and
5'-ATTCTAGAGGCGGGGGGGGGGCGAT(30)NN-3'. Library was
constructed using the Clontech Creator SMART kit and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CB975542 724 bp mRNA linear EST 01-MAY-2003 CAB30007 IIb Ra F02 Cabernet Sauvignon Berry Stage I - CAB3 Vitis vinifera CDNA clone CAB30007_IIb_Ra_F02 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCCCTGTGTACCCAGACAGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATC 2627
                                                                                             2447
                                                                                                                                                                                                              2448 GAIGCCAITITCAIGAAGIGGAIAIGCCAIGACIGGAGIGACGACCAIIGCGCGAAGIIC 2507
                                                                                                                                                                                                                                                                                                                                  CTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGGTGATGGTTGCAGAGTGGGTA 2567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vitis vinifera
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicotyledons,
rosids, Vitaceae, Vitis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rosids; Vitaceae; Vitis.

1 (bases 1 to 724)

Goes da Silva, F., Iandolino, A., Lim, H., Baek, J., Leslie, A., Xu, J., Jones, K. and Cook, D.
                                ö
                                                                                                                                    204
                                                                                                                                                                                                                                                                                                                                                                                                  264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   265 CICCCIGIGIACCCAGACACGAGCCIAGCGACCAAGAAIGIGAICCACAICGACIGCAIC 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Expressed sequence tags from Vitis vinifera 'Cabernet sauvignon' berries at various developmental stages Unpublished (2003)
                                                                                                                                                                                                                                                        205 CTCAAGAACTGCTACGATGGGCTTCCCAACAATGGAAAGGTGATGGTTGCAGAGAGTGCGTA
                                                                                          2388 CCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGTTCGTCAGGCGAAAGGGA
                                   0; Gaps
                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. 724
/organism="vitis vinifera"
/mol type="mRNA"
/cultivar="Cabernet Sauvignon"
/db xref="taxon:2976"
/clone="CAB30007 IID_Ra_F02"
/sex="Hermaphrodite"
                                         .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Douglas Cook, PhD
CABS Genome Facility
UC Davis, Plant Pathology
One Shields Ave, Davis, CA 95616, USA
Tel: 530 754 6561
Fax: 530 754 6617
Email: drcook@ucdavis.edu
                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: drcook@uddavis.edu
Seq primer: GCCAAACGAATGGTCTAG.
Location/Qualifiers
                                         .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CB975542.1 GI:30298748
                                             Matches 246; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vitis vinifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2628 ATGITG 2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             325 ATGTTG 330
                                                                                                                                                                                                                                                                                                                                                        2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
CB975542/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
```

ö

```
High quality sequence stop: 446.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BACKWARD: T7 21mer (backward)
Plate: 123 row: B column: 02
Seq primer: T3 20mer
High quality sequence stop: 536.
                                                                                                                                                                                                                                                                                                                                              Plate: 67 row: F column: 23
Seg primer: SP6
Class: BAC ends
                                                                                                                                                                                                                                                                                                                        Email: acameron@caltech.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: jcushman@unr.edu
                                                                                                                                                                                                                                                                                 Tel: (626) 395-8421
Fax: (626) 793-3047
  (bases 1 to 446)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 775-784-1918
Fax: 775-784-1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: T3 20mer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vitis vinifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vitis vinifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                      AUTHORS
REFERENCE
                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 6
CB915484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
  832 bp DNA linear GSS 11-OCT-2002 CH230-259118.TV CHORI-230 Segment 2 Rattus norvegicus genomic clone CH230-259118, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSS 29-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: szhao@tigr.org
Clones are derived from the rat BAC library CHORI-230
(http://www.chori.org/bacpac/rat230.htm). For BAC library
availability, please contect Pieter de Jong (pdejong@mail.cho.org).
Clones may be purchased from BACPAC Resources
                                                                                                                                                                                                                                                                        Jaco, S., Shetry, J., Shatsman, S., Tsegaye, G., Geer, K., Shvartsbeyn, A., Gebregeorgis, E., Overton, L., Russell, D., Chen, D., Rat BAC End Sequences from Library CHORI-230 MboI segment Unpublished (1999)

Conter GSSs: CH230-259118.TJ

Contact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville, MD 20850, USA
Tel: 301 838 0200
Fax: 301 838 0200
                                                                                                                                                                     Rattus norvegicus
Bukaryota; Metazoda; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Rattus
1 (bases 1 to 832)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SP 0067 B1 C12 SP6E Strongylocentrotus purpuratus, purple sea urchin, sperm genomic BAC library Strongylocentrotus purpuratus genomic clone Plate=67 Col=23 Row=F, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (http://www.chori.org/bacpac/or ering information.htm). BAC end page: http://www.tigr.org/tdb/bac_ends/rat/bac_end_intro.html Plate: 259 row: I column: 18 Seq primer: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pTARBACI.3; Site_1: MboI; Site_2: MboI; CHORI-230 Rat (BN/SBNH8d/MCW) BAC library produced by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strongylocentrotus purpuratus
Strongylocentrotus purpuratus
Eukaryota: Metazoa; Echinodermata; Eleutherozoa;
Echinoidea; Meccinoidea; Echinoidea; Echinoidea;
Strongylocentrotidae; Strongylocentrotus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.3%; Score 39; DB 11; Length 832; 100.0%; Pred. No. 6e-09; tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCT 1446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               152 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGATTTTCTCT 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cell_type="Brain"
/clone_lib="CHORI-230 Segment 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="genomic DNA"
/strain="BN/SsNHsd/MCW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              446 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:10116"
/clone="CH230-259118"
                                                                                                                                                   Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pieter de Jong'
                                                                                                          BZ169456.1 GI:23810653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AZ160839.1 GI:8313497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AZ160839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
AZ160839/c
LOCUS
DEFINITION
                                                                                                                                                SOURCE
ORGANISM
                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                 ACCESSION
                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
BZ169456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
```

```
VVDI23B02 368629 An expressed sequence tag database for abiotic stressed berries of Vitis vinifera var. Chardonnay Vitis vinifera cDNA clone VVDI23B02 5, mRNA sequence.
CB915484.1 GI:30130145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Strongylocentrotus purpuratus"
/mol type="genomic DNA"
/db Zref="taxon:7668"
/clone="plate=67 Col=23 Row=F"
/clone_lib="Strongylocentrotus purpuratus, purple sea
/uchin, sperm genomic BAC library"
/note="Organ: sperm; Vector: BACe3.6; BAC Clones in B-Coli
DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cushman, J.C.
An expressed sequence tag database for abiotic stressed berries of Vitis Vinitera var. Chardonnay
Unpublished (2002)
Contact: Cushman JC
Department of Biochemistry
University of Nevada
MS200, Reno, NV 89557-0014, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Bermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosida; Vitaceae; Vitis.
1 (bases 1 to 536)
Cameron, R.A., Mahairas, G., Rast, J.P., Martinez, P., Biondi, T.R., Swatzell, S., Wallace, J.C., Poustka, A.J., Livingston, B.T., Wray, G.A., Ettensohn, C.A., Lehrach, H., Britten, R.J., Davidson, E.H. and Hood, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                            A sea urchin genome project: Sequence scan, virtual map, and additional resources
Proc. Natl. Acad. Sci. U.S.A. 97 (17), 9514-9518 (2000)
10920195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 446;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        · 1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTC 1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          433 GAGAGAGAGAGAGAGAGAGAGAGAGATTTCTC 396
                                                                                                                                                                                                                               Contact: Cameron, RA, Davidson, EH, Hood, L. Division of Biology 156-29
California Institute of Technology
Pasadena California 91125, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 1.2%; Score 38; DB 11; Best Local Similarity 100.0%; Pred. No. 2e-08; Matches 38; Conservative 0; Mismatches 0
```

ö

Gaps

ö

FEATURES

ORIGIN

ઠે

```
1..588
|/organism="Oryza alta"
|/organism="Oryza alta"
|/organism="Oryza alta"
|/organism="Oryza alta"
|/db_lype="Genomic DNA"
|/db_xref="taxon:52545"
|/disue_rype="young leaves"
|/db_host="DH10B-T1 phage resistant"
|/clone_lib="OABBa"
|/clone_lib="OABBa"
|/note="Vector: pAGIBAC1; Site_1: HindIII; Site_2: HindIII"
                                                                                                                                                                                                                                                                                      588 bp DNA linear GSS 28-FEB-2005
OA_BBa0105F12.f OA_BBa Oryza alta genomic clone OA_BBa0105F12 5',
genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Enterprise Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Enterpropriate Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; BEP clade; Enrhartoideae; Oryzeae; Oryza.

1 (Bases I to 588)

3 (Massel to 588)

5 tum, D., Rao, K., Luo, M., Jetty, R., Kudrna, D., Muller, C., Hattield, Y., Soderlund, C., Wing, R., and Jackson, S.A.

1 (Dupublished (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: sjackson@purdue.edu
Basecalling by phred version 0.020425.c. This sequence was derived
from the raw sequence read by clipping with lucy version 1.19s.
Bases 43-630 of the raw sequence (length 1070) were retained after
Length 544;
                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Purdue University
915 W. State St., West Lafayette, IN 47907, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1405 CACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 1442
                                                                                                                    2454 ATTTTCATGAAGTGGATATGCCATGACTGGAGTGACGA 2491
                                                                                                                                                      Query Match
1.2%; Score 38; DB 13; L
Best Local Similarity 100.0%; Pred. No. 2.1e-08;
Matches 38; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
1.2%; Score 38; DB 8; L.
Best Local Similarity 100.0%; Pred. No. 2.1e-08;
Matches 38; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clipping.
Plate: 105 row: F column: 12
Seq primer: TAA TAC GAC TCA CTA TAG GG
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Picea sitchensis (Sitka spruce)
Picea sitchensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Scott A. Jackson
Jackson Laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CZZ65395.1 GI:60334500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 7654963621
Fax: 7654967255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oryza alta
                                                                                                                                                                                                                                                                                                                                                                                                                                CZ265395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
DR508885/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                   RESULT 8
CZ265395/c
                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organiam="Brassica napus"
/organiam="Brassica napus"
/wol_type="mRNA"
/wol_type="mRNA"
/db_xref="GABI:11737"
/db_xref="GABI:11737"
/db_xref="GABI:11737"
/db_xref="GABI:11737"
/db_xref="Howers and flower buds"
/clone="MPIZD10207112Q"
/tissue_type="flowers and flower buds"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="MPIZD102"
/clone="M
                                                                                                                                                                                             /tissue_type="berries"
/dev_stage="mixed; 8, 9, 11, 13, 15, 16 weeks daf"
/dev_stage="mixed; 8, 9, 11, 13, 15, 16 weeks daf"
/clone_lib="An expressed sequence asg database for abiotic
stressed berries of vitis vinifera var. Chardonnay"
/note="Vector: Lambda Uni-Zap XR, Bluescript SK-; Site_1:
ECORI; Site_2: XhOI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CX189729
72-E022720-021-012-017-frev ADIS-MPIZ 021 Brassica napus CDNA clone
MPIZp1022017120, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Brassica napus
Brassica napus
Brassica napus
Brassica napus
Brazyota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons;
rosids; eurosids II; Brassicales; Brassicaceae; Brassica.
I (bases I to S44)
Jakoby, M., Ichmann, D. and Weisshaar, B.
direct submission to GenBank (ADIS-MPIZ 021)
Compublished (2004)
Contact: Bernd Weisshaar
Chair of Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bielefeld University, Institute for Genome Research
Universitaetsstrasse 25, D-33594 Bielefeld, Germany
Tel: +49-521-106 6873
Fax: +49-521-106 6423
                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 536;
                                                                                                                                                                                                                                                                                                                                                                                                                                            1.2%; Score 38; DB 4; Length 536
100.0%; Pred. No. 2.1e-08;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: bernd.weisshaar@uni-bielefeld.de
Insert Length: 544 Std Error: 0.00
Plate: 12 row: 0 column: 17
                                                                                        /organism="Vitis vinifera"
/mol_type="mRNA"
/db_xref="taxon:29760"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                              ocation/Qualifiers
                                                                                                                                                                                    /clone="VVD123B02"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CX189729
CX189729.1 GI:56837153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Brassica napus (rape)
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 100.0
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seq primer: frev.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
CX189729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
```

COMMENT

ö

Gaps

ö

0; Indels

543

ORIGIN

Length 588;

ဌ

```
Submitted (17-NOV-2003) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-7-22 Suehiro-chou'Tsurumi-ku, Yokohama, Kanagawa, 230-0045, Japan (E-mail:hattoriogsc.riken.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-911, Fax:81-45-503-9170)
Clones are derived from the mouse BAC library MSMg01. For BAC library availability, please contact Kuniya Abe (abe@rtc.riken.jp). Tsukuba Institude, Bio Resource Center, Kuniya Abe (abe@rtc.riken.jp). The Institute of Physical and Chemical Research (RIKEN) 3-1-1 phone: 81-298-36-9189, fax: 81-298-36-9199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    403 bp mRNA linear EST 19-JUN-2002
gil08h10.yl Mouse Organ of Corti cDNA pBluescript Mus musculus cDNA
Elos gil08h10 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST analysis of gene expression in the mouse Organ of Corti at the onset of hearing Unpublished (2002)
Contact: Kachar, B.
Structural Cell Biology
National Institute of Deafness and other Communication Disorders 50/4249 South Drive, NIH, Bethesda, MD 20892-8027, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Buarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Mus.
                                                Contribution of Asian mouse subspecies Mus musculus molossinus genomic constitution of strain C57BL/6J, as defined by BAC-end sequence-SNP analysis Genome Res. 14 (12), 2439-2447 (2004)
          Saitou, N., Hattori, M., Sakaki, Y., Moriwaki, K. and
                                                                                                                                                     2 (bases 1 to 895)
Hattori,M., Toyoda,A., Noguchi,H., Kojima,T. and Sakaki,Y.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tissue type="mixture of kidney and spleen" /clone_lib="MSMg01 Mouse Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 895;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTC 1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'organism="Mus musculus molossinus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 14; L
2.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . Match 1.2%; Score 38; DB Local Similarity 100.0%; Pred. No. 2.2 les 38; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic DNA"
/sub_species="molossinus"
/db_xref="taxon:57486"
/clone="WGMg01-172D06.T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                            l: abe@rtc.riken.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BQ568480.1 GI:21471797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 403)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ECORI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : ECORI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: 301-402-1599
Fax: 301-402-1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequencing : T7
LIBRARY
                              Shiroishi, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R.Site 1
R.Site 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kachar, B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
BQ568480/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                             JOURNAL
PUBMED
REFERENCE
                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
year old clonal trees grown under greenhouse conditions in standard potting soil mixture; Vector: pBluescript II SK (+) KR; Site-li: Khol (5° end of cDNA); Site_2: BamHI (3' end of cDNA); s. mRNA was isolated from each tissue exer then pooled. CDNA was prepared from 20 micrograms of mRNA according to the full-length cDNA library construction method described by Carninci P. et al. (2000), Genome Research 10(10): Acid-1630 and directionally ligated into the pBluescript II SK (+) KR vector digested with Khol (5' end) and BamHI (3'). Plasmid DNA was then transformed by electroporation into DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AG368193 895 bp DNA linear GSS 21-DEC-2004
Mus musculus molossinus DNA, clone:MSMg01-172D06.T7, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:3332"
/clone="W802723 G14"
/sex="Hermaphrodite"
/lab_host="R_Coli DH10B cells"
/clone lib="SS-IL-A-FL-14"
/note="Organ: Green portion of the leader tissue from one
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus molossinus (Japanese wild mouse)
Mus musculus molossinus
Eukaryota; Metacoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Abe, K., Noguchi, H., Tagawa, K., Yuzuriha, M., Toyoda, A., Kojima, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTCTC 1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTC 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cells (Invitrogen) for propagation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.2%; Score 38; DB 10; 100.0%; Pred. No. 2.2e-08; ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Picea sitchensis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="mRNA"
/cultivar="FB3-425"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:47979398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AG368193.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POLYA=Yes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AG368193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                  REFERENCE
                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AG368193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

ö

Gaps

ö

Gaps

ö

0; Indels

0; Mismatches

1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCT 1444

FEATURES Source

```
Matches 37; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                         /exc="maile and female"
//dev stages="Post natal day S to 13"
//dev stages="Post natal day S to 13"
//doce="Corgan: Organ of Corti; Vector: pBluescript"
//doce="Corgan: Organ of Corti; Vector: pBluescript"
//doce="Corgan: Organ of Corti; Vector: pBluescript"
//doce="Corgan: Organ of Corti; Vector: pBluescript"
//doce st follows 102 samples from post-natal (P) day S; 72
from Fol and 24 from P13. After killing animals by
derival dislocation followed by decapitation, the bulla
was removed and opened in Leibowitz medium. The bony
organie of the cochlea was chipped away, stria vascularis
and spiral ligament were removed and the sensory
epithelium was carteried using the micro Fastrack kit
catalog # K1533-02; Invitrogen, Carlabad, CA), according
to manufacturer's instructions Reverse transcription and
library construction were carried out with the Uni-Zap XR
vector kit (Catalog # 23721; Stratagene) and Uni-Zap XR
vector kit (Catalog # 23721; Stratagene) and Uni-Zap XR
vector kit (Catalog # 23721; Stratagene) and Uni-Zap XR
vector kit (Catalog # 23721; Stratagene) and Uni-Zap XR
vector kit (Catalog # 23721; Stratagene) and Uni-Zap XR
vector kit (Catalog # 23721; Stratagene) and Uni-Zap XR
vector kit (Catalog # 23721; Stratagene) and Uni-Zap XR
vector kit (Catalog # 23721; Stratagene (Id Jolla, CA, USA), according to
primed with the linker-primer and transcribed using
moloney murine leukemia virus reverse transcribed using
Moloney was bluther ended with Fu UNA polymerase, ligated with
Ecox I adapters in the presence of ligase and digapate
synthesized with DNA polymerase and Rhase H. Complementary
DNA was bluther ended with Ptu DNA polymerase, ligated with
Ecox I adapters in the presence of ligase and digapate
synthamic a stratagene's Exassist Interference
with Xno I. The cDNA was sequentially size fractionally
and Clontech Chroma Spin-1000 (Clontech, Palo Alto, CA)
and Clontech Chroma Spin-1000 (Clontech, Palo Alto, Ca)
sided and Wob II the phage library was estimated to be lighpate
ilid Gold and vupon titration on XLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    strength BigDye terminator sequencing chemistry (Applied Biosystems, Foster City, CA). Sequencing reactions were performed on MJ Tetrad thermal cyclers (MJ Research, Waltham, MA), and analyzed on 3700 automated capillary sequencers using POPS polymer (Applied Biosystems, Foster City, CA). The frequency distribution of the library is as follows: 72% of genes have I copy; 14.3% 2; 12% 3-10; 1.4% 11-50 and 0.1% 51-150. As to gene function, 45% of genes are present in GenBank and have know function; 23% have hits in GenBank, but do not have assigned function; 12% are uncharacterized ESTs and 20% are unidentified."
    Email: kacharb@nidcd.nih.gov
Plate: 108 row: h column: 10
Seg primer: M13RP1 reverse primer (ABI).
                                                                                                                                                                                                           /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:10090"
/clone="gi108h10"
                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                    /mol_type="mRNA"
/strain="BALB/c"
                                                                                                                                                                              .403
```

1.2%; Score 37; DB 3; Length 403; 100.0%; Pred. No. 7.2e-08;

Best Local Similarity

Query Match

```
Faxis 501 230 220 Care Banath State Bac library CHORI-230 Clones are derived from the rat BAC library CHORI-230 (http://www.chori.org/bacpac/rat230.htm). For BAC library availability, please contact Pieter de Jong (pdejong@mail.cho.org). Clones may be purchased from BACPAC Resources (http://www.chori.org/bacpac/or ering_information.htm). BAC end page: http://www.tigr.org/bacpac/or ering_information.htm). BAC end plate: 19 row: G column: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 04-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ô
                                                                                                                                                                                                GSS 30-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /cell type="Brain"
/clone lib="CHORI-230 Segment 1"
/note="Vector: pTARBAC2.1; Site_1: BcoRI; Site_2: BcoRI;
CHORI-230 Rat (BN/S8NH8d/MCW) BAC library produced by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The locates a control of the latest and the latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and latest and 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA955639
UI-R-E1-fb-d-11-0-UI.81 UI-R-E1 Rattus norvegicus cDNA clone
UI-R-E1-fb-d-11-0-UI 3' similar to gi|1658515|gb|U75530|MMU75530
Mus musculus PHAS-II mRNA, complete cds, mRNA sequence.
                                                                                                                                                                                                                 CH230-19G3. TV CHORI-230 Segment 1 Rattus norvegicus genomic clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus norvegicus
Bukaryota; Metazoa, Chordata; Craniata; Vertebrata; But
Mammalia; Butheria; Buarchontoglires; Glires; Rodentia;
Sciurognathi; Muroidea; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 406;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Indels
                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCT 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   227 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCT 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.2%; Score 37; DB 11; L
llarity 100.0%; Pred. No. 7.2e-08;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Rattus norvegicus"
                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="genomic DNA"
/strain="BN/SsNHsd/MCW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:10116"
/clone="CH230-19G3"
                                                                                                                                                                                                406 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pieter de Jong"
                                                                                                                                                                                                                                                                                                                                                            BH269271.1 GI:17181577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /sex="Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seq primer: T7
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                       BH269271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37;
                                                                                                                                                                                                                                                                                                                                                                                                             GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA955639/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
                                                                                                                                   RESULT 12
BH269271/c
                                                                                                                                                                                                             LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
```

GSS 04-OCT-2000

VERSION KEYWORDS SOURCE ORGANISM

ACCESSION

AUTHORS TITLE

REFERENCE

JOURNAL PUBMED COMMENT

```
(http://www.jax.org/resources/documents/dnares/). The DNA was hydrodynamically sheared by repeated passage through a 0.005 inch orifice at constant velocity. The sheared DNA was blunt end-repaired with T4 DNA polymerase and T4 polymucleotide kinase. Adaptor oligonucleotides were ligated to the blunt ends in high molar excess. The adaptored DNA was purified and size-selected for a 9.5 to 10.5 kb range using preparative agarose gel electrophoresis. Vector DNA was prepared from a derivative of pwD42 (gilfa732114 [gb] [AR129072.1), a copy-number inducible derivative of plasmid R1. The vector was ligated with adaptors complementary to the insert adaptors and purified. The sheared, adaptored mouse DNA was annealed to adaptored vector DNA, and transformed into chemically-competent E. coll X110-Gold (Stratagene) cells and selected for ampicillin resistance."
                          A2475799 1M0294G09F Mouse 10kb plasmid UUGC1M library Mus musculus genomic clone UUGC1M0294G09 F, genomic survey sequence.
                                                                                                                                                                                                                                                    Mus musculus

Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Butheria; Buarchontoglires; Glires; Rodentia;

Sciurognathi; Muroidea; Muridae; Murinae; Mus.

1 (bases 1 to 491)

Dunn, D., Aoyagi, A., Barber, M., Machon, R., Pedersen, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /lab host="B. Coli strain XLIO-Gold, T1-resistant, F-" /clone lib="Mouse 10kb plasmid UUGCIM library" /note="Wetcor: PWD42nry. Purified genomic DNA from M. musculus C57BL/6J (male) was obtained from the Jackson Laboratory Mouse DNA Resource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biomedical Polymers Research Bldg., 20 S. 2030 E., SLC,
                                                                                                                                                                                                                                                                                                                                                                                                       Duni, D., Aoyagi, A., Barber, M., Beacorn, T., Duval, B., Hamil, C., Islam, H., Longacre, S., Mahmoud, M., Meenen, E., Pedersen, T., Rose, M., Rose, R., Stokes, R., Tingey, A., von Niederhausern, A. and Wright, D. Weiss, R. Mouse whole genome scaffolding with paired end reads from 10kb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.2%; Score 37; DB 11; Length 491;
100.0%; Pred. No. 7.4e-08;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCT 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   236 GAGAGAGAGAGAGAGAGAGAGAGAGAGATTTCT 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rel: 801 585 5606
Pax: 801 585 7177
Pax: 801 585 7177
Pax: 801 585 7177
Insert Length: 10000 Std Error: 0
Plate: 0294 row: G column: 09
Seq primer: CGTTGTAAAACGACGGCCAGT
Class: plasmid ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .491
/organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plasmid inserts
Unpublished (2000)
Contact: Robert B. Weiss
University of Utah Genome Center
University of Utah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="genomic DNA"
/strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence stop: 491.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db xref="taxon:10090"
/clone="UUGC1M0294G09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                         Mus musculus (house mouse)
                                                                                                                                                          AZ475799.1 GI:10633924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 37; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Univer
Rm. 308, Bio
USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                            DEFINITION
                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                               ACCESSION
                                                                                                                                                                VERSION
KEYWORDS
4Z475799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Sozes, MB Conductional Genomics Contact: Sozes, MB Coordinated Laboratory for Computational Genomics University of Iowa 375 Newton Road, 4156 MEBRF, Iowa City, IA 52242, USA Tel: 319 335 8250 Fax: 319 335 8250 Fax: 319 335 9565 Email: bento-soares@uiowa.edu The sequence tag present in the cDNA between the NotI site and the oligo-dirtack served to identify it as a clone from the normalized adult 18-Day-Embryo library. CDNA Library Preparation: M. Fatima Bonaldo, Ph.D. Clone distribution: clones will be available through Research Genetics This clone is also available through Research Genetics This clone is also available through Lim.A.G.E. Consortium at LiML (info@image.lini.gov). INAGE ID=1779319 The following repetitive elements were found in this Sequence: 295-365, >(GA)n#Simple_repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /done libe "UIT.R. "ITTED Pacify Site 1: Not 1; Site 2: Eco RI; /note="Vector: pT773D-Pacify Site 1: Not 1; Site 2: Eco RI; The UIT.R. Ell library is a subtracted library derived from the UIT.R. El library. The UIT.R. Ell library consisted of a mixture of individually tagged normalized libraries constructed from 8, 12 and 18-day embryo. The tag is a string of 3-5 nucleotides present between the Not I site and the oligo-dT track which allows identification of the library of origin of a clone within the mixture. The subtracted library (UIT.R. El) was constructed as 610 ws: PCR amplified cDNA inserts from a pool of UIT.R. El clones from which 3' ESTS had been derived was used as a driver in a hybridization with the UIT.R. El library in the form of single-stranded circles. The remaining single-stranded circles. The remaining single-stranded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hydroxyapatite column chromatography, converted to double-stranded circles and electroporated into DH10B bacteria (Life Technologies) to generate the UI-R-EI library. This procedure has been previously described (Bonaldo, Lennon and Soares, Genome Research 6: 791-806,
                                                                                                                           Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Euarchontoglires, Glires, Rodentia,
Sciurognathi, Muroidea, Muridae, Murinae, Rattus.
                                                                                                                                                                                                                      1 (bases 1 to 456)
Bonaldo,M.F., Lennon,G. and Soares,M.B.
Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                   8889548
On May 7, 1998 this sequence version replaced gi:3119334.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:10116"
/clone="U1-R-B1-fb-d-11-0-UI"
/dev_stage="adult"
/lab_host="DH10B (Life Technologies)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCT 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      325 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCT 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 37; DB 1; I Pred. No. 7.3e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.2%; Scor.
100.0%; Pred. No. ...
0, Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/strain="Sprague-Dawley"
                                                                                                                                                                                                                                                                                                                                                     Genome Res. 6 (9), 791-806 (1996)
                                                               Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
AA955639.1 GI:4238034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100..
These 37; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .456
                                                                                                                                                                                                                                                                                                                          discovery
```

FEATURES

ö

Gaps

;

셤

1408

ઠે

ORIGIN

```
ö
                              BG803750 600 bp mRNA linear EST 20-DEC-2001 0241-38 Mouse E14.5 retina lambda ZAP II Library Mus musculus cDNA, mRA Sequence.
BG803750 GI:17950659
                                                                                                                                                                                                             Mus musculus

Bukaryota; Metacas (Craniata; Vertebrata; Euteleostomi;

Bukaryota; Metacas (Chordata; Craniata; Vertebrata; Euteleostomi;

Bukaryota; Butheria; Buarchontoglires; Glires; Rodentia;

Sciurognathi; Muroidea; Muridae; Murinae; Mus.

(Dases 1 to 600)

Mu, X., Zhao, S., Pershad, R., Hsieh, T.-F., Scarpa, A., Wang, S.W.,

White, R.A., Beremand, P.D., Thomas, T.L., Gan, L. and Klein, W.H.

Gene expression in the developing mouse retina by EST sequencing and microarray analysis

Nucleic Acids Ress. 29 (24), 4983-4993 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /mol_type="mRNA"
/db_xref="taxon:10090"
/tishue_type="neural retina"
/tishue_type="neural retina"
/dev_stage="embronic day 14.5 post-fertilization"
/clone_lib="Mouse E14.5 retina lambda ZAP II Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Department of Biochemistry and Molecular Biology University of Texas M.D. Anderson Cancer Center Box 117, 1515 Holcombe Blvd., Houston, TX 77030, USA Tel: 713 792 3646
Fax: 713 790 0329.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
1.2%; Score 37; DB 2; Length 600;
Best Local Similarity 100.0%; Pred. No. 7.5e-08;
Matches 37; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTCT 1444

    .600
    /organism="Mus musculus"

                                                                                                                                                                                         Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Klein WH
                                                                                                                                                VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
RESULT 15
BG803750
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
PUBMED
COMMENT
                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
```

22 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCT 58

ઠે g Search completed: November 1, 2006, 19:51:20 Job time : 13816 secs

Sequence 18, Appl Sequence 403, App Sequence 203, App

ALIGNMENTS

Sequence

Sequence 12756, p. Sequence 13001, p. Sequence 13001, p. Sequence 11973, p. Sequence 12583, p. Sequence 17392, p. Sequence 209, App

Sequence Sequence Sequence

Sequence Sequence Sequence

09-949-016-195979

Sequence Sequence Sequence

Sequence

```
61 CTTGAGATGACCTACAGTGATAGCTTGATGAATAAGATGGGATAATAGATTCACCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATAAAAAGGTAGGGAGATAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATTGGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCACCATCAGCAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTTGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-US-SSG-4ULC-113

Sequence 113, Application US/09598401C

Patent No. 6596925

GENERAL INFORMATION:

APPLICANT: Perera, J. Ranjan

APPLICANT: Rice, Stephen J.

TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION MODIFICATION of Gene Expression FILE REFERENCE: 11000.1036c2

CURRENT APPLICATION NUMBER: US. No. 6596925 60/146,591

PRIOR PLILING DATE: 1999-07-30

PRIOR PLILING DATE: 1999-07-30

PRIOR FILING DATE: 2000-02-24

PRIOR FILING DATE: 2000-02-24

PRIOR FILING DATE: 1999-03-25

NUMBER OF SEQ ID NOS: 120

SOFTWARRE: FastSEQ for Windows Version 4.0

SEQUENCE: PRIOR PRICED FOR MINDER PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR 
                                    US-09-615-192A-23
US-09-165-789-23
US-09-244-805-37
US-09-004-838-91
US-09-949-016-15083
US-09-949-016-15083
US-09-949-016-12756
US-09-949-016-1375
US-09-949-016-1375
US-09-949-016-1735
US-09-949-016-1735
US-09-949-016-1735
US-09-949-016-1735
US-09-949-016-1735
US-09-949-016-1735
US-09-949-016-1735
US-09-949-016-1735
US-09-949-016-1735
US-09-975-316-18
US-09-975-316-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 3070;
100.0%; Pred. No. 0;
iive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Eucalyptus grandis
                                    607
807
807
807
1273
5085
5085
100877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 100.
Best Local Similarity 100.
Matches 3070; Conservative
                                                                                                                                                                                                                                                        136264
136265
251672
251682
254964
                                                                                                                                                                                                                                                                                                                                                                           254964
611587
RESULT 1
US-09-598-401C-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-598-401C-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 3070
  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            107, App
107, App
12, App
12, App
106, App
24, App
24, App
24, App
299, App
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14173, A
16813, A
13877, A
                                                                                                                                                                                        (without alignments)
10482.307 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44248,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44247,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                           1 agcaccatcagcaaaaaata........acttcgaacaaaaaaaaa 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /EMC_Celerra_SIDS3/ptodata/2/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             / EMC_Celerra_SIDS3/ptodata/2/ina/1_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/5_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/6A_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/6B_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/T_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/H_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/PGTUS_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/PGTUS_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/PGTUS_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/PGTUS_COMB.seq:*
/ EMC_Celerra_SIDS3/ptodata/2/ina/PECCOMB.seq:*
                                                                                                                                                             November 1, 2006, 11:40:17; Search time 548 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                        GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-598-401C-113
US-09-598-401C-60
US-09-615-192A-107
US-09-165-789-107
US-09-598-401C-12
US-09-598-401C-12
US-09-16-789-106
US-09-16-789-106
US-09-16-789-106
US-09-16-789-24
US-10-10-144A-299
US-10-10-144A-871
US-09-149-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-14173
US-09-949-016-44248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                            1403666 segs, 935554401 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                 nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                              Gapop_60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patents NA:*
                                                                                                                                                                                                                                                          US-10-702-319A-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2447
54601
65300
202111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       594
594
601
601
601
                                                                                                                                                                                                                                                                                                                                                          OLIGO NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      225

4777

4777

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1111

1
                                                                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB E
Maximum DB E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Word size :
                                                                                                                   nucleic
                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š.
```

ö

Gaps

.; 0

Length 3070; Indels

DB 3; ö 9 9 120 120 180 180 240 240

UU

1312 CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION CTOCCOMMUNICATION
6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B 6 B
241 CCNITCHICCONTORGONICAMITCTIONGGRAPHICTICITIANAMICCCCI 300 241 CCNITCHICCONTORGONICATION CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUES AND CONTINUE

-09-598-401C-60 Query Match 40.9%; Score 1255; DB 3; Length 2096; Best Local Similarity 99.5%; Pred. No. 0; Matches 1655; Conservative 0; Mismatches 8; Indels 0; Gaps 0; 1408 GAGAGAGAGAGAGAGAGAGAGAGAGATTTTCTCTTATATTCTGGTTCACCGGTT 1467	1528 GGGTTGGTGAAGCTCCTATATATCGAACCTCCACCACCTACTTCAT 1587	17.08 CAAGTCTCGGACGAGGGGACCTTTCGCCATGCGGGCGGGGGGCCTCCGTGGCTCCTTCGCCATGCAGGGGGGGG	854 CGGGGGGGTTCCTCCCCGGGGGAAGTCGCGGCCCAGCTCCCGACCCAGAACCCCGAG 1888 GCACCGGTCATGCTCGACCGGATCTTCCGGCTGCTGCTGCTCCCGAGCTCCCGAG 1988 GCACCGGTCATGCTCGACCGGATCTTCCGGCTGCTGCCCAGCTCCGTGCTCCGTGCTCCGTGCTCGCTGCTGCTGCTGCT	2008 1034 2068 1094 2128 1154 2148 1214 2248 1274 2308 1334
US-09 Oue Bes Mat Oy Db	3 6 6 6 6 6	6 6 6 6 6	66666	868686868686
	2641 ACCCAGGGGAAAGAGACACAGAAGAGTTCGACITGGCCAAAGGGCCGGAT 2 2641 ACCCAGGGGAAAGAGACACAGAAGAGAGTTCGAGGCTTGGCCAAAGGGGCCGGAT 2 2641 ACCCAGGGGAAAGAGAGACACAGAAGGAGTTGGAGATTGGCCAAAGGGGCCGGAT 2 2701 TTCAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGATCCTGAAGA 2 2701 TTCAGGGCTTCCAAGTCATGTGTGTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA 2 2701 CTCAGGGCTTCCAAGTCATGTGTGTGTGTTTTTGGCACTCATGGAGTTCCTGAAGA 2 2761 CCGCTTGATCTGGTGTGTGTGTGTGTTTTTTTTTTTTTAAAGGTTCTTGAAGA 2 2761 CCGCTTGATCTGGTTGTGTGTGTGTTTTTTTTTTTTTAAAGGTTCTTTTTTTT	Db 2761 CGGCTTGATCTCTCTGTGGTGATGTTCTTGGTTTTGAAAGGTCGTGAAG 2820	2941 AGTTTTGAGTG 2941 AGTTTTGAGTG 3001 GTGCCTGAATG 3001 GTGCCTGAATG 3001 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	RESULT 2 National Adadadada 3070 RESULT 2 National Color

```
2967
                                                                                                                                                                                                                                                                                                                                                                                                                                           2053
                                                                                                                                                                                                                                                                                                    1873
                                                                                                                                                                                                                                                                                                                            2907
                                                                                                                                                                                                                                                                                                                                                                                    1934 GAAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT 1993
                                                                                                                                                                                                                                                                                                                                                                                                                    CACAGAATGTGTAACGAAACGGCGTATATGGGATGTGCCTGAAATGGAAATTGTGATAT 3027
                                                                                                                                                                                     2727
                                                                                                                                                                                                           1753
                                                                                                                                                                                                                                  2787
                                                                                                                                                                                                                                                         1813
                                                                                                                                                                                                                                                                                2847
                                                                                                                                                                                                                                                                                                                                        2667
                                               2547
                                                                                          TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG 2607
                                                                                                     1574 TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG 1633
                                                                                                                                                     TGATCCACATCGACTGCATCATGTTGGCCCCACAACCCCAGGGGAAAGAAGAGAGACAGA
                                                                                                                                                                                                 CTITCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                              GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                                                                                                                                                                                                              CATACCAAGTICTICICATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                        GAAGTTACAAGATTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
                                              AGGAGTTCGAGGCATTGGCCCAAAGGGGCCGGGATTTCAGGGCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-615-192A-110
US-09-615-192A-1

Sequence 107, Application US/09615192A

Patent No. 6410718

GENERAL INFORMATION:
APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for TITLE OF INVENTION: Modification of Plant Light FILER REFERENCE: 11000.1003c4U
CURRENT APPLICATION NUMBER: US/09/615,192A
CURRENT FILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11
PRIOR FILING DATE: 1996-09-11

PRIOR FILING DATE: 1998-10-09

NUMBER OF SEQ ID NOS: 405.
SOFTWARE: FRAESEQ for Windows Version 3.0

SEQ IDN 0107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-615-192A-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
US-09-615-192A-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3028
                                                                                                                                                                                                                                                                                                                                                        1874
                                                                                                                                                                                                                                                                                                                                                                                                                           2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2054
                                                                                                                                                                                           2668
                                                                                                                                                                                                                                                                                      2788
                                                                                                                                                                                                                                                                                                            1814
                                                                                                                                                                                                                                                                                                                                  2848
                                                                                                                                                                                                                                                                                                                                                                               2908
                                                                                                  2548
                                                                                                                                                                                                                  1694
                                                                                                                                                                                                                                         2728
                                                                                                                                                                                                                                                               1754
                                                                                                                                              2608
                                                                                                                                                                                                                                                                                                                                                   g 3
                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                    8 6 8 8
                                                                                                                                                                                                                                                                                8 B 8
                                                                                                                  8 & 8
                                                                      q
                                                                                           ∂
                          g
                                                     ઠે
```

25.2%; Score 774; DB 3; Length 1630;

Query Match

```
2822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2883 AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG 2942
                                                                                                                                                                                                                                                                                                                                                                                                                2702
                                                                                                                                                                                                                                                                                                                                                                                                                                              2762
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCCTTTTCTCACAGTIGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATAAG 2882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1103
                                                                                                                                                                                                                                                                                                                                                                                   2642
                                                                                                                                                                                                                                                                                                                        2522
                                                                                                                                                                                                                                                                                                                                                      2582
                                                                                                                                                                                                                                                                                            2462
                                                                                                                                         2163
                                                                                                                                                                                                    2283
                                                                                                                                                                                                                                                                                                                                                                     983
                                                                                                           2103
                                                                                                                                                                                                                                                                                                                                       923
                                                1983
                                                                              2043
                                                                                                                                                                                                                                                743
                                                                                                                                                                                                                                                                            803
                                                                                                                                                                                                                                                                                                          863
     ä
                                                                                                                                                                                     623
                                                                                             443
                                                                                                                          503
                                 323
                                                               383
                                                                                                                                                                                                                                                                                                                                                                                   CAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                                                                                                                                                                                                                                              2643 CCAGGCGGGAAAGAGAGACACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                         GCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTGGGATTTGAAAGGTCGTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCAAGGAGGAGGGGACATGTTCGTCAGGGTTCCAAAGGGAAGATGCCATTTTCATG
                                                                                                                                                                                                                                                                                                   GATGCGCTTCCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCCA
                                                                                                                                                                                                                                         ATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCACCCCTTCCTGGT
                                                                                                                                                                                                                                                                                                                        AAGTGGATATGCCATGACTGACGACCATTGCGCGAAAGTTCCTCAAGAACTGCTAC
                                                                                                                                                                                                    ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACGTG
                                                                                                                                                                                                             GTCGATGTCGGAGGCGGCACTGGGGCCGTGCTCAGCATGATCGTTGCCAAATACCCATCA
                                                                                                                                                                                                                                                                      TATCATGGCACCGACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACC
                                                1924 GCCAGCTACTCCGTGCTCACGTGCACCTCCGGGACCTCCCCGATGGCAAGGTCGAGCGG
                                                                              CTCTACGGCTTAGCGGCGGGGGGGCGAAGTTCTTGGTCAAAAAAGGAGGAGGAGGGCTCTCCATC
                                                                                      GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                   GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                 1864 CAGCITCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTG
                                 Gaps
      ä
       Indels
       9
Pred. No. 0;
0; Mismatches
  99.48;
 Best Local Similarity 99.4
Matches 1194; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2823
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1224
                                                                                                                                                                                                                                                                                  744
                                                                                                                                                                                                                                                                                                                              2463
                                                                                                                                                                                                                                                                                                                                                           2523
                                                                                                                                                                                                                                                                                                                                                                                          2583
                                                                                                                                                                                                                                                                                                               804
                                                                                                                                                                                                         2224
                                                                                                                                                                                                                                                                    2344
                                                                                                                                                                                                                                                                                                 2403
                                                                                   1984
                                                                                                  384
                                                                                                                                                                            2164
                                                                                                                                                                                                                                      2284
                                                                                                                                                                                                                                                     684
                                                                                                                                              2104
                                                                                                                                                             504
                                                                                                                                                                                                                       624
                                                                                                                                                                                           564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                               중 점
                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                 ઠે
                                                                                                                                          Š
                                                                                                                                                        9
9
9
9
                                                                                                                                                                                                         ò
                                                                              ò
                                                                                               g
                                                                                                                 ò
                                                                                                                            ద
                                       셤
                                                      8
                                                                   g
```

```
2462
                                                                                                                                               2522
                                                                                                                                                                                                          2582
                                                                                                                                                                                                                                                                   2642
                                                                                                                                                                                                                                                                                                  1043
                                                                                                                                                                                                                                                                                                                              2702
                                                                                                                                                                                                                                                                                                                                                            1103
                                                                                                                                                                                                                                                                                                                                                                                         2762
                                                                                                                                                                                                                                                                                                                                                                                                                       1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1224 GCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAGGAAACAATAAG 1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1284 AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1404 GCCTGAATGATGGAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTTCGAACAAA 1463
                                                                                                                 863
                                                                                                                                                                             923
                                                                                                                                                                                                                                        983
GTCGATGTCGGAGGCGGCACTGGGGCCGTCAGCATGATCGTTGCCAAATACCCATCG 743
                                                                                                        804 GTCAAGGACGTCGGAGACGACATGTTCGTCACGTTCCAAAGGGAGAGATGCCATTTTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3003 GCCTGAATGATGGAATTGTGATATTCTGTCTTTTTCAGTAAATCACTTCGAACAAA
                                                                                                                                                                864 AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC
                                                                                                                                                                                                          GATGCGCTTCCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCA
                                                                                                                                                                                                                                                                    GACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCACAAC
                                                                                                                                                                                                                                                                                       984 GACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATGATGTTGGCCCACAAC
                                                                                                                                                                                                                                                                                                                                               1044 CCAGGCGGGAAAGAGAGGACACAGAAGGGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                            1104 CAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1164 GCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTTGGATTTTGAAAGGTCGTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2883 AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTGAGTCTTCTGCATACTGATTTTCACAGAATGTGTAAACGACGCGTATATGGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG
                                                                                                                                                                                                                            924 GATGCGCTTCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCA
                                                                                                                                                                                                                                                                                                                                2643 CCAGGCGGGAAAGAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                           2703 CAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCCTTTTCTCACAGTTGGCTTCGCCATACCAAGTTCTTCTCATAAAAGGAAACAATAAG
                                              2344 ATGAAAGGGATCAACTTCGACC-GCCCCAAGGATTGAAGACGCCCCACCCCTTCCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 12, Application US/09276599;
Sequence 12, Application US/09276599;
Fatent No. 6380459;
GENERAL INFORMATION:
APPLICANT: Perera, J. Ranjan;
APPLICANT: Rice, Stephen J.
TITLE OF INVENTION: Composition and methods for the TITLE OF INVENTION: modification of gene expression;
FILE REFERENCE: 11000.1036;
CURRENT FILIG DATE: 1999-03-25;
NUMBER OF SEQ ID NOS: 21;
SOFTWARE: PASESEQ for Windows Version 3.0;
SEQ ID NO 12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3063 A 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1464 A 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2823
                                                                                       2403
                                                                                                                                                  2463
                                                                                                                                                                                                                                                                       2583
                                                                                                                                                                                                            2523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                             g
                                                                                                                                                                             g
                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                     吕
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                       ò
                                                      셤
                                                                                       ઠે
                                                                                                                                                 8
                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCGATGTCGGAGGCGCCATGGGGCCCTGCTCAGCATGATCGTTGCCAAATACCCATCA 2343
   1284 AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG 1343
                                                                                                       1404 GCCTGAATGATGGAAATTGTGATATTCTGTCTTTTTTTCAGTAAATCACTTCGAACAA 1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2224 ACCATTACTATGAAGAAAGATACTGGAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTG 2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 503
                                                                                       GCCTGAATGATGGAAATTGTGATATTCTGTCTTCTTTTTCAGTAAATCACTTCGAACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCTACGCCTTAGCGCCCGGTGTGCTATTGTCTTGGTCAAGAACGAGGACGGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           564 TATCATGGCACCGACCGGGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGTTCGAGGGCCTCGAGACGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264 CAGCTCCCGACCCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              324 GCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCTACGGCTTAGCGCCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATCATGGCACCCGCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                               TTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGATGT
                                                CAGCTCCCGACCCCAGAACCCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1630;
                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 774; DB Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25.2%;
ilarity 99.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 1194; Conserv
                                                                                                                                                    A 3063
                                                                                                                                                                                À 1464
                                                                                                                                                                                                                             RESULT 4
US-09-169-789-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-169-789-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1630
                                                                                                                                                    3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2284
                                2943
                                                                                          3003
                                                                                                                                                                                1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                        요
                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                            ઠ
                                                                                       Š
                                                                                                                                                  ઠે
                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
```

```
Query Match
                                                                                                                                                                                                                                                                             1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                  g
                                                                                                                                8 8 8
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                             Š
                    a
                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1116 CATGITGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGAAATTTGCAAGCT 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          157
                                                                                                                                                                                                                                                                                                                                                                                                                                         1296 TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTTCCATAAACCCCTGATT 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1175
                                                                                                                                                                                                                                                                                                  1235
                                                                                                                                                                                                                                                                                                                                                                       1295
                                                                                                                                                                                                                                                                                                                                    217
                                                                                                                                                                                                                                                              157
                                                                                                                                                                                                                                                                                                                                                                                            278 TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTCCATAAACCCCTGATT 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGGT
                                                                                                                                                                                                                                                                                                1176 GACGATGGCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAAAGAGCA
                                                                                                                                                                                                                                                                                                                      CGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATATTAATT
                                                                                                                                                                                                                            1116 CATGTTGACAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                                                                                                                                                                                                                                                              98 cargirgacaaaaaggcigarragfargarcirggagirgirggrgcaaarriggaagcr
                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 272; DB 3; Length 661;
Pred. No. 5.6e-127;
0; Mismatches 1; Indels
                                                                                                                                                      Length 661;
                                                                                                                                                                                          1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               y carbackou information:
APPLICANT: Perera, J. Ranjan
APPLICANT: Perera, J. Ranjan
APPLICANT: Rice, Stephen J.
TILLE CANTERIC Stephen J.
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
TITLE OF INVENTION: Modification of Gene Expression
TITLE APPLICATION NUMBER: US/09/598,401C
CURRENT PILLING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: U.S. No. 6596925 60/146,591
PRIOR APPLICATION NUMBER: PCT/NZ00/00018
PRIOR APPLICATION NUMBER: PCT/NZ00/00018
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09/276,599
PRIOR APPLICATION NUMBER: U.S. No. 6596925 09/276,599
PRIOR PILLING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 120
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 661
                                                                                                                                                      Query Match

8.9%; Score 272; DB 3; L
Best Local Similarity 99.7%; Pred. No. 5.6e-127;
Matches 322; Conservative 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1416 GAGAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             398 GAGAGAGAGAGAGAGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-598-401C-12; Sequence 12, Application US/09598401C; Sequence 12, Application US/09598401C; Septent No. 6596925; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 8.9%;
Best Local Similarity 99.7%;
Matches 322; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , ORGANISM: Eucalyptus grandis
US-09-598-401C-12
                          ; LOCATION: (1) ... (654)
; NAME/KEY: TATA signal
; LOCATION: (537) ... (543)
; NAME/KEY: CAAT signal
; LOCATION: (499) ... (502)
US-09-276-599-12
FEATURE:
NAME/KEY: 5'UTR
                                                                                                                                                                                                                                                                                                                                                                               1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                       ð
```

```
1296 TAACAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTCCATAAACCCCTGATT 1355
                                                                                                                                                                                                                                                                                           1897 AIGCICGACCGGAICTICCGGCIGGIGGCCAGCIACTCCGIGCICACGIGCACCCICCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               297 AIGCTCGACCGGATCTTCCGGCTGCTGGCGAGCTAGCTCCGTGCTCACGTGCACCTCGC
1176 GACGATGCCCCTCAGGGAAATTAAGGCGCCAACCCCAGATTGCAAAGAGCACAAAAGAGCA
                            1236 CGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCCAGTAAGGGTAATATT
                                                                                                                                         218 CGATCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATATTAATT
                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1957 GACCTCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGC 2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INCREMILON:

APPLICANT: Blockeberg, Leonard N.

APPLICANT: Blockeberg, Leonard N.

APPLICANT: Blockeberg, Likka

TITLE OF INVENTION: Material and Methods for the

TITLE OF INVENTION: Modification of Plant Lignin Content

FILE REFERENCE: 11000.1003c4U

CURRENT FILING DATE: 2000.07-12

PRIOR FILING DATE: 2000.07-12

PRIOR PLILON ONUMBER: US 08/975,316

PRIOR PLILON ONUMBER: US 08/713,000

PRIOR PLILON NUMBER: US 09/169,789

PRIOR FILING DATE: 1996.09-11

PRIOR FILING DATE: 1996.09-11

PRIOR FILING DATE: 1998-10-09

NUMBER OF SEQ ID NOS: 405

SEQ ID NO 106

LENGTH: 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.6%; Score 111; DB 3; Length 407
100.0%; Pred. No. 1.6e-45;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content
FILE REFERENCE: 11000.1003c2
CURRENT APPLICATION NUMBER: US/09/169,789
CURRENT FILING DATE: 1998-10-09
EARLIER APPLICATION NUMBER: US 08/975,316
                                                                                                                                                                                                                                                                                                                                                                                                      GAGAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-615-192A-106
; Sequence 106, Application US/09615192A
; Patent No. 6410718
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-169-789-106; Sequence 106, Application US/09169789; Sequence 106, Application US/09169789; Patent No. 6653528; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
, ORGANISM: Eucalyptus grandis
US-09-615-192A-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 100.0 Matches 111; Conservative
```

```
1897 ATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGC 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-169-789-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                         셤
                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                          1897 ATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGC 1956
                                                                                                                                                                                                                                                                                                                                                                  297 ATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGC 356
                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                1957 GACCICCCCGAIGGCAAGGICGAGCGGCTCIACGGCTIAGCGCCCGGIGIGC 2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                       357 GACCTCCCGGATGGCAAGGTCGAGGCTCTACGGCTTAGCGCCGGTGTGC 407
                                                                                                                                                                                                                                                                                              ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT:
BLOKEBERG, Leonard N., HAVUKKALA, Ilkka
APPLICANT: and GETERSON, Alastair W
TITLE OF INVENTION: MATERIALS AND METHODS FOR
TITLE OF INVENTION: THE MODIFICATION OF PLANT LIGNIN CONTENT
NUMBER OF SEQUENCES: 88
CORRESPONDENCE ADDRESS:
ADDRESSEE: Law Offices of Ann W. Speckman
STREET: 2601 Elliott Avenue, Suite 4185
CITY: Seattle
                                                                                                                                                                                                                                                3.6%; Score 111; DB 3; Length 407; 100.0%; Pred. No. 1.6e-45; tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
3.6%; Score 111; DB 2; Length 421;
Best Local Similarity 100.0%; Pred. No. 1.6e-45;
Matches 111; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 98121
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastESC for Windows Version 2.0
CURRENY APPLICATION DATA:
APPLICATION NUMBER: US/08/975,316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 37,007
REFERENCE/POCKET NUMBER: 11000/1003C1
TELECOMMICATION INFORMATION:
TELEPHONE: 206-269-0565
EARLIER FILING DATE: 1997-11-21
EARLIER APPLICATION NUMBER: US 08/713,000
EARLIER FILING DATE: 1996-09-11
NUMBER OF SEQ ID NOS: 185
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 106
LENGTH: 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/713,000
FILING DATE: September 11, 1996
ATTORNEY/AGENT INFORMATION:
NAME: SLEATH, Janet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 24, Application US/08975316
Patent No. 5952486
                                                                                                                                                                                  ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                              3.6%
Best Local Similarity 100.0
Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 421 base pairs
nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 206-269-0563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                    US-09-169-789-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 9
US-08-975-316-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-975-316-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE:
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                          ઠ
```

```
1897 ATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGC 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           311 Arácrica Accedarorreces consecración de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de accesa de ac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Gaps
                                                                                                                                         1957 GACCTCCCCGATGGCAAGGTCGAGCGCCTCTACGGCTTAGCGCCGGTGTGC 2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1957 GACCTCCCCGATGGCAAGGTCGAGCGCCTCTACGGCTTAGCGCCCGGTGTGC 2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    371 GACCTCCCCGATGGCAAGGTCGAGCGCCTCTACGGCTTAGCGCCCGGTGTGC 421
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
US-09-615-192A-24

i Sequence 24, Application US/09615192A

j Sequence 24, Application US/09615192A

j Sequence 24, Application US/09615192A

j GENERAL INFORMATION:
    APPLICANT' Bloksberg' Leonard N.
    APPLICANT' Bloksberg' Leonard N.
    APPLICANT' Havukkala, Ilkka
    TITLE OF INVENTION: Macterials and Methods for the
    ITTLE OF INVENTION: Modification of Plant Lignin Content;
    FILE REFERENCE: 11000-1003-040

    CURRENT APPLICATION NUMBER: US/09/615,192A

    CURRENT FILING DATE: 2000-07-12

    PRIOR APPLICATION NUMBER: US 08/773,000

    PRIOR APPLICATION NUMBER: US 08/713,000

    PRIOR PILING DATE: 1996-09-11

    PRIOR APPLICATION NUMBER: US 09/169,789

    NUMBER OF SEQ ID NOS: 405

    SOFTHARE: FREEEQ for Windows Version 3.0

    SEQ ID NO 24

    LENGTH: 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 3; Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Materials and Methods for the TITLE OF INVENTION: Materials and Methods for the TITLE OF INVENTION: Madification of Plant Lignin Content; FILE REFERENCE: 11000.100322.
CURRENT APPLICATION NUMBER: US/09/169,789
CURRENT RILING DATE: 1998-10-09
EARLIER APPLICATION NUMBER: US 08/975,316
EARLIER APPLICATION NUMBER: US 08/713,000
EARLIER PILING DATE: 1996-09-11
NUMBER OF SEQ ID NOS: 185
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 24
LENGTH: 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 3.6%; Score 111; DB 3; Length 42 Best Local Similarity 100.0%; Pred. No. 1.6e-45; Matches 111; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.6%; Score 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-169-789-24
; Sequence 24, Application US/09169789
; Patent No. 6653528
; GENERAL INFORMATION:
; APPLICANT: Bloksberg, Leonard N.
; APPLICANT: Havukkala, Ilkka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TYPE: DNA; ORGANISM: Eucalyptus grandis
US-09-615-192A-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Eucalyptus grandis
```

```
TYPE: DNA
COGANISM: Eucalyptus grandis
US-10-101-464A-871
                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-949-016-14173/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Human
                                LENGTH: 2447
SEQ ID NO 871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                             Sequence 299, Application US/10101464A

patent No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general No. 6768041

general Reference: 11000.1020c2

current Application Number: US/10/101,464A

current Application Number: 09/704,302

prior Application Number: 09/28,986

prior Application Number: 60/162,866

prior Application Number: 60/162,866

prior Application Number: PCT/US00/00724

prior Filing Date: 1999-101-12

prior Prior Application Number: PCT/US00/00724

prior Filing Date: 2000-01-11

NUMBER OF SEQ ID NOS: 989

seq ID NO 299

LENGTH: 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INVENTALION:

APPLICANT: Strabala, Timothy
APPLICANT: Strabala, Timothy
APPLICANT: Strabala, Timothy
APPLICANT: Nieuwenhuizen, Nicolaas
APPLICANT: Nieuwenhuizen, Nicolaas
APPLICANT: Nieuwenhuizen, Nicolaas
APPLICANT: Nieuwenhuizen, Nicolaas
TITLE OF INVENTION: Compositions Isolated from Plant Cells
TITLE OF INVENTION: and Their Use in the Modification of Plant Cell Signaling
FILE REFERENCE: 11000.1020.2
CURRENT FILING DATE: 2002-03-18
PRIOR PELING DATE: 2000-11-01
PRIOR APPLICATION NUMBER: 09/228,986
PRIOR PILING DATE: 1999-01-12
PRIOR APPLICATION NUMBER: 60/162,866
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PILING DATE: 1999-11-01
PRIOR PELING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
PRIOR PLING DATE: 1999-11-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                      1897 AIGCICGACCGGAICTICCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGC 1956
                                ö
                                                                                                                          Gaps
                                   0; Gaps
                                                                                                                                                                                                        1957 GACCTCCCGATGCCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGC 2007
                                                                                                                                                                                                                                            371 GACCTCCCGGATGGCAAGGTCGAGCGCCTCTACGGCTTAGCGCCGGTGTGC 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
1.1%; Score 35; DB 3; Length 537;
Best Local Similarity 100.0%; Pred. No. 4.6e-07;
Matches 35; Conservative 0; Mismatches 0; Indels
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 1442
           100.0%; Pred. No. 1.6e-45; tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-101-464A-871
Sequence 871, Application US/10101464A
; Petent No. 6768041
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Eucalyptus grandis
              Best Local Similarity 100. Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                              RESULT 12
US-10-101-464A-299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-101-464A-299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                        g
                                                                                                                                                                                                                       ò
```

```
Sequence 16813. Application US/09949016

Sequence 16812.33. Application US/09949016

Patent No. 6812339

GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
ITILE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF

TITLE OF INVENTION: WINDHER: US/09/949,016

CURRENT APPLICATION NUMBER: 60/241,755

PRIOR FILING DATE: 2000-10-20

PRIOR PLING DATE: 2000-10-03

PRIOR PLING DATE: 2000-10-03

PRIOR PLING DATE: 2000-09

PRIOR PLING DATE: 2000-09

PRIOR PLING DATE: 2000-09

PRIOR PLING DATE: 2000-09

PRIOR PLING DATE: 2000-09

SEQ ID NOS: 207012

SEQ ID NO 16813
                                                                                                                                                                                                                                                                            US-US-US-141/3/C

Sequence 14173, Application US/09949016

Sequence 14173, Application US/09949016

Sequence 14173, Application US/09949016

Sequence 14173, Application US/09949016

SERVERAL INFORMATION:
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF

FILE REFERENCE: CLOOM1307

CURRENT FILING DATE: 2000-04-14

PRIOR APPLICATION NUMBER: 60/241,755

PRIOR FILING DATE: 2000-10-20

PRIOR PLING DATE: 2000-10-30

PRIOR PLING DATE: 2000-10-03

PRIOR PLING DATE: 2000-10-03

PRIOR PLING DATE: 2000-10-03

PRIOR PLING DATE: 2000-10-03

PRIOR PLING DATE: 2000-09-08

NUMBER OF SEQ ID NOS: 207012

SOFTWARE: FeatSEQ for Windows Version 4.0

SEQ ID NO 14173

LENGTH: 54601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 54601;
Length 2447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                         0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1407 CGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTT 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.1%; Score 35; DB 3; Lv
Local Similarity 100.0%; Pred. No. 4.6e-07;
hes 35; Conservative 0; Mismatches 0;
                                                                                                               1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 1442
Query Match
1.1%; Score 35; DB 3; 1
Best Local Similarity 100.0%; Pred. No. 4.6e-07,
Matches 35; Conservative 0; Mismatches 0
                                                                                                                                                 | FEATURE:
| NAME/KEY: misc_feature
| LOCATION: (1)...(54601)
| OTHER INFORMATION: n = A,T,C or G
US-09-949-016-14173
```

```
ö
                                                                                                                                                                                                                                            0; Gaps
                                                                                                                                                                                              Query Match
1.1%; Score 35; DB 3; Length 65300;
Best Local Similarity 100.0%; Pred. No. 4.6e-07;
Matches 35; Conservative 0; Mismatches 0; Indels C
; LENGTH: 65300
; TYPE: DNA
; ORGANISM: Human
; FEATURE:
; LOCATION: (1) ... (65300)
; OTHER INFORMATION: n = A,T,C or G
US-09-949-016-16813
```

Search completed: November 1, 2006, 13:52:55 Job time: 550 secs

<u>ک</u> ۾

THIS PAGE LEFT BLANK

```
GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
```

OM nucleic - nucleic search, using sw model

November 1, 2006, 12:32:03 ; Search time 3571 Seconds

Run on:

(without alignments) 10563.719 Million cell updates/sec

US-10-702-319A-113 3070

Perfect score:

1 agcaccatcagcaaaaaata.......3cttcgaacaaaaaaaaa 3070 Sequence:

Gapop_60.0 , Gapext 60.0 OLIGO NUC Scoring table:

18892170 seqs, 6143817638 residues Searched:

20 Word size : 28818 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

Database

1: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US07_ptDBCOMB.seq:*
2: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US08_PUBCOMB.seq:*
3: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US08_PUBCOMB.seq:*
4: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US08_PUBCOMB.seq:*
5: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US09_PUBCOMB.seq:*
6: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US09_PUBCOMB.seq:*
7: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
8: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
9: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
10: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
11: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
12: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
13: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US10F_PUBCOMB.seq:*
14: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
15: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
15: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:*
16: /EMC_Celerra_SIDS3/ptodata/2/pubpna/US11B_PUBCOMB.seq:* Published Applications NA Main:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	Sequence 113, App	Seguence 113, App	Sequence 113, App	Sequence 60, Appl	Sequence 60, Appl	Sequence 60, Appl	Sequence 107, App	Sequence 1, Appli	7	Sequence 3, Appli	4	Sequence 12, Appl	Sequence 12, Appl	Sequence 12, Appl	Sequence 5, Appli	Sequence 106, App	Sequence 24, Appl
	В ІВ	6 US-10-137-036-113	9 US-10-702-319A-113	10 US-10-927-641-113	6 US-10-137-036-60	9 US-10-702-319A-60	10 US-10-927-641-60	7 US-10-174-693-107	8 US-10-703-091-1	8 US-10-703-091-2	8 US-10-703-091-3	8 US-10-703-091-4	6 US-10-137-036-12	9 US-10-702-319A-12	10 US-10-927-641-12	8 US-10-703-091-5	7 US-10-174-693-106	7 US-10-174-693-24
	Query Match Length DB	3070	3070	3070	2096	2096	2096	1630	534	485	306	293	661	661	661	119	407	421
de	Query Match	100.0	100.0	100.0	40.9	40.9	40.9	25.2	17.4	15.8	10.0	9.5	8.9	8.9	8.9	3.9	3.6	3.6
	Score	3070	3070	3070	1255	1255	1255	774	534	485	306	293	272	272	272	119	111	111
	Result No.	-	7	m	4	ιΩ	9	7	œ	o.	10	11	12	13	14	15	16	17

98 66 41	3.2 1.1 1.3	98 66 354	8 10	US-10-703-091-6 US-10-703-091-7 US-10-779-543-10544	
નંન	25	578 578	12	US-10-301-480-589546 US-10-301-480-1202955	Sequence 589546, Sequence 1202955,
H	7	15050	11	US-10-893-483-113	Sequence 113, App
· -		398	٥ ج	US-10-674-124A-1893	Sequence 1893, Ap
-	1 (1	986	12	US-10-301-480-1175811	
Н	Ŋ	00996	٣	US-09-997-722-85	Š,
٦	7	123192	9	US-10-175-523-71	Sequence 71, Appl
٦	7	123192	13	US-11-099-266-71	71,
H	1.2	157875	m	US-09-935-464-1	1,
ب	ď	157875	9	US-10-125-835-1	Sequence 1, Appli
H	1.1	266	σ	US-10-425-115-18188	Sequence 18188, A
ä		271	æ	US-10-242-535A-29684	Sequence 29684, A
1.1	н	271	æ	US-10-085-783A-29684	Sequence 29684, A
1.1	Н	356	9	US-10-062-727-156	Sequence 156, App
1.1	Н	402	ø	US-10-062-727-78	Sequence 78, Appl
H	н	404	10	US-10-779-543-9925	Sequence 9925, Ap
ij	Н	518	œ	US-10-424-599-128495	Sequence 128495,
H	1:1	529	ω	US-10-437-963-3046	Sequence 3046, Ap
H	:	537	9	US-10-101-464A-299	
Н	1.1	537	10	US-10-864-252-299	Sequence 299, App
Н	1.1	567	8	US-10-424-599-110277	Sequence 110277,
7	1.1	807	9	US-10-027-632-8139	Sequence 8139, Ap
Н	۲:	807	7	US-10-027-632-8139	Sequence 8139, Ap
н	۲.	1262	۲.	US-10-369-493-30442	Sequence 30442, A

ALIGNMENTS

CURRENT FILING DATE: 2002-04-30

PRIOR APPLICATION NUMBER: PCT/NZ 01/00115

PRIOR PILING DATE: 2000-06-20

PRIOR FILING DATE: 2000-11-28

PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 09/724,624

PRIOR PILING DATE: 2000-11-28

PRIOR PILING DATE: 2000-06-20

PRIOR FILING DATE: 2000-06-20

PRIOR PILING DATE: 2000-02-24

PRIOR PILING DATE: 2000-02-24

PRIOR PILING DATE: 1999-07-30

PRIOR PILING DATE: 1999-07-30

PRIOR FILING DATE: 1999-07-30

PRIOR FILING DATE: 1999-03-25

NUMBER OF SEQ ID NOS: 143

SEQ ID NO 113

LENGTH: 3070 Sequence 113, Application US/10137036
Publication No. US20030101478A1
GENERAL INFORMATION:
APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REPERENCE: 11000.1036c4
CURRENT APPLICATION NUMBER: US/10/137,036 TYPE: DNA ORGANISM: Eucalyptus grandis US-10-137-036-113

Gaps ö Length 3070; Indels Query Match 100.0%; Score 3070; DB 6; Best Local Similarity 100.0%; Pred. No. 0; Matches 3070; Conservative 0; Mismatches 0;

ö

MCCACCITCACCAMAMINATIONING		CTCCGTAITTCTCTCATACCCCTGATTAATTTGGTGGGAAAGCGACAACCCCAA CCCACAAAAGGTCAGATGTCATCCACGAGAGAGAGAGAGA	TGGTGTAGGGTCCAATATTTTGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATGAA ACCTCCACCACCACCATCACTCCACCACCATTATCGGTTTATTATTCCTCTGCTT ACCTCCACCACCACCATCACTCCACCACCATTTATCCGTTTTATTTCCTCTGCTT TCCTTTGCTCCACCACCACCATCAACCCCACCATTTATCCGTTTTATTTTCCTCTGCTT TCCTTTGCTCCACCACCAGAAGAAGAAGAAGAAGAAGAAGAAAGGATTCGACC TCCTTTGCTCCAGTTCTCGCGGAAGAAGAAGAAGAAGAAGAAGAAAAGAATGGGTTCGACC TCCTTTGCTCCAGTTCTCGCCGAAGAAGAAGAAGAAGAAGAAAAGAATGGGTTCGACC GGCTCCGAGATCTCGCCGAACCCCAAGTCTCGCACCCCTTTCCTTTGCTCCAGATTCGCCCCAGTTCGACCCCAGATTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCGACCCCAAGTTCAAGATTCGACCCCAAGTTCGACCCCAAGTTCAAGATTCGACCCCAAGTTCAAGATTCGACCCCAAGTTCAAGATTCAACCCCAAGTTCAAGATTCAACCCCAAGTTCAAGATTCAAGATTCAACCCCAAGTTCAAGATTCAACCCCAAGTTCAAGATTCAACCCCAAGACCAAGAACAAGAACAAGAACAAAAAAAA	1681 GGCTCCGAGACCCCGACCCCGAGCCCCAGGTCTCGGACGAGGCGACCTTTTCGCC 1/400 1741 ATGCAGCTGGCGCTCCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGAC 1800 1741 ATGCAGCTGGCGCTCCTCGTGCTCCCCATGGTCCTAAAGGCCGCCATCGAGATCGAC 1800 1801 CTCCTCGAGATCATGGCCAAGGACGGGCCGGCGCTCCTCCTCCAGGGGGAAATCGCC 1800 1801 CTCCTCGAGATCATGGCCAAGGACGGGCCGGCGCTTCTCTCCTCCAGGGGGAAATCGCC 1800 1801 GCACAGGTCCCGAACCCCGAGGCCGGGCGCGCTTCTCCTCCCAGGGGGAAATCGCC 1800 1861 GCACAGCTCCCGAACCCCGAACCCCGAGCGCCGTCTTCTCCCACGGGGAAATCGCC 1800 1861 GCACAGCTCCCGAACCCCGAACCCCGACCCGTCATGCTCCACGGGAACTTCCGGCTG 1920 1861 GCACAGCTCCCGAACCCCGAACCCCGACCCGTCATGCTCCGACCGGATCTTCCGGCTG 1920	1921 CTGGCCAGCTACTCCGTGCACCTCCGGGACCTCCCCGATGGCAAGGTCGAG
AGCINICAL COLOR COLOR DA COLOR DE LA COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE COLOR DE CO	8 8 8 8 8 8 8	3 8 8 8 8 8	8 8 8 8 8 8	8 3 8 3 8 3 8	8 8 8 8 8 8 8
	AGCACATCAGCAAAAATAGATGGGATAGAGTGGGGACACCACCTGTTCAGTTTGATTCC	CCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGATAGTCCTTTAGAAAGTCCCA	Trgacgiccactgacataccettagaaatgatctagaaataagtacaggcaggtagggctt Aaggcgattggcaatcaccttagaaatgatcttatatgcgtaattacaagactgatggg Aaggcgattggcaatcaccttagaaatgatcttatatgcgtaattacaaagactgatggg Aaggcgattggctaattgttcaggatgtggtaccttgggtaattagggctatgatggtcg GCGGTATTGGTCTAATTGTCAGGATGTGGTACCTTGGGTATTAGGGCTATGATGGTGTGGT GCGGTATTGGTCTAATTGTTCAGGATGTGGTACCTTGGGTATTAGGGCTATGATGGTTCG ATTGAGATTGGTCTAATTGTTCAGGATGTGGTACCTTGGGTATTAGGGCTATGATGGTTCG ATTGAGATTCGTGGTAGTATGATGCCAGAATTAAAAAAAGTGCTGCTGATGAGAATAGTTC		GTAGTCTCGATGTCCCACTGTCTGAATAGATGTGAAAGTAACCTATGTCTCTTTTTTTT

; FILE REFERENCE: 11000.1036c5 ; CURRENT APPLICATION NUMBER: US/10/702,319A ; CURRENT FILING DATE: 2003-11-06 ; PRIOR FILING DATE: 2002-11-08 ; PRIOR FILING DATE: 2002-11-08 ; PRIOR FILING DATE: 2002-11-08 ; PRIOR FILING DATE: US. No. 60/425,087 ; PRIOR FILING DATE: US. No. 10/137,036 ; PRIOR FILING DATE: 2002-04-30	PRIC PRIC PRIC PRIC	PRIOR APPLICATION NUMBER: U.S. Patent No. 09/276,599 ; PRIOR PILING DATE: 1999-03-25 ; NUMBER OF SEQ ID NOS: 129 ; SOFTWARE: FastSEQ for Windows Version 4.0 ; SEQ ID NO 113		1 AGCACCATCAGCAAAAATAGATGGGATAGAGTGGGACACCACCTGTTCAGTTGATTCC 60	OY 61 CTTGAGATGACCTACAGTGATAGATGAATAAGATGGGATAATAGATTCACCAGAGG 120 	QY 121 GATAAAAAGGTAGGGGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAATA 180 Db 121 GATAAAAAGGTAGGGAGTATGTCCCCGTCTGATGCCTCGGGTAGGTTGAAATA 180	QY 181 AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACACCGTCGTTATGCATGAT 240 DD 181 AGGCAAAAGTTCGCCGTTGAATTTGACAAAAAAAAAACACCGTCGTTATGCATTGCATGAT 240	OY 241 CCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGAGATAGTCCTTAGAAAGTCCCA 300 241 CCATTGTACCCATGTAGGGTGAAATCCTAGAGTGAGGAGATAGTCCTTTAGAAAAGTCCA 300	Qy 301 TTCCACCCTATCATAGGCTTTCTGCATATCCATTTTAAGAACAGCCCGGAATTGACGTCT 360	Oy 361 ACATTITCTGACTTTAAATTGATGTGTAGAACCTCTTAGACTATTAAAATATTGTCCTGAAT 420 161	Oy 421 TIGACGICCACIGACAAAAGCGCTTTGCICCTGGAAAATAAGTACAGGCAGGTAGGCTT 480 bb 421 TIGACGICCACTGACAAAGCGCTTTGCTCCTGGAAAATAAGTACGGCAGGTAGGCCTT 480	QY 481 AAGGCGATTGGCAATCACTTAGAAATGATCTTATATGCGTAATTACAAAGACTGATGGG 540	QY 541 GCGGTATTGGTCTAATTGTTCAGATGTGGTACCTTGGGTATTAGGGCTATGATGGTTCG 600 bb 541 GCGGTATTGGTCTAATTGTTCAGGATGTGGTACCTTGGGGTATTAGGCTATGATGATGGTCG 600	Oy 601 ATTGAGATTCGGTGGTATGATGCCAGAATTAAAAAAGTGCTGCACTGATGAGAATAGTTC 660
Db 2161 GAGTATCATGGCACCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGGATCAC 2220 ,		2461 TGAAGTGGATATGCCATGACTGGACGACCATTGCGCGAAGTTCCTCAAGAACTGCT 	2521 ACGATGCGCTTCCCAACAATGGAAAGTGATGCAGAGTGCGTACTCCCTGTGTACC 2581 CAGACACGAGCCTAGCGACCAAGAATGTGATCGACTGAGTGCGTACTCCCTGTGTACC 2581 CAGACACGAGCCTAGCGACCAAGAATGTGATCGACTGACT	2641 ACCCAGGCGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGAT 	2701 TTCAGGGCTTCCAAGTCATGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGA	2761 CCGCTTGATCTGCTCCTCTGTGGTGATGTTCATGGATTTGAAAGGTCGTGAAG [2821 GAGCCCTTTCCCACAGTTGGCTTCGGCATACCAGTTCTTCTCTTAAAAGGAAACAATA 2821 GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA	2881 AGAAGCGACTGTATGAGGCCCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAA	OY 2941 AGTTTGAGTCTTCTGATACTGATTTCACAGATGTGTAACGAAACGCGTATATGGAT 3000 .	3001 GTGCCTGAATG 3001 GTGCCTGAATG	Oy 3061 AAAAAAAAA 3070 Db 3061 AAAAAAAA 3070	REGULT 2 US-10-702-319A-113 ; Sequence 113, Application US/10702319A	; FUDILCALION NO. USZUUSUUZEIEZAI ; GENERAL INFORMATION: ; APPLICANT: Perera, Ranjan ; APPLICANT: Rice, Stephen	

17.11 MICCACCACCACCCCCACCCCCACCCCCCCCCCCCCCCC
8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6
61 ATTCCCCAGGACTATICCCCATCATCACCACATANAMAGICCACTCCACTCACACCACTCACCCCCCCCCCCCCCCC

6 6 6 6 6 6 6 6

g

121 GATAAAAAGGTAGGGAGATCTCCCCGTCTGATGCCTCGGGTAGGTTGAAAATA 180 181 AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACCCGTCGTTATGCATTGCATGAT 240 181 AGGCAAAAGTTCGCCGTTGAATTTGACAGCAAAAGACCCGTCGTTATGCATTGCATGAT 240 241 CCATTGTACCCATGTAGAGTGAAATCCTAGAGTGAGGAATAGCTTTAGAAAGTCCCA 300 241 CCATTGTACCCATGTAGAGTGAAATCCTAGAGTGAGGAATAGACGTCCA 300 301 TTCCACCCTATCATAGAGTTATCCATTTTAAGAACGCCCGGAATTGAGAGGTCCA 300 301 TTCCACCCTATCATAGAGTTATCCATTTTAAGAACGCCCGGAATTGACGTCT 360 301 TTCCACCCTATCATAGAGTTTCTGCATATCCATTTTAAGAACGCCCGGAATTGACGTCT 360 301 TTCCACCCTATCATAAGGCTTTCTGCATATCCATTTTAAGAACGCCCGGAATTGACGTCT 360 301 TTCCACCCTATCATAAGGCTTTTCTGCATTTTAAGAACGCCCGGAATTGACGTCT 360 301 TTCCACCCTATCATAAGTTTCAATTTTAAGAACTATTAAAATTGTCCTGAAT 420 421 TTGACGTCTTTAAATTGATGTTAGAACCTCTTAGACTATTAAAATTGTCCTGAAAT 420 421 TTGACGTCCACTGAAAAATTACTCCTCTGAAAAATAATACAGGCAGG	481 AAGGCGATTGCCATCACTTAGAATGATCTTATATCCCTAATTACCAAGACTGATGGGGGGGG
8 6 8 6 8 6 8 6 8	B & B & B & B & B & B & B & B & B & B &
2821 GAGCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA 2880 2821 GAGCCCTTTTCTCAGATTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATA 2880 2881 AGAAGCGACTGTATGATGGCGCAAGTTGCTATACAGTTTTTTTGTTGTTTTTATGTCTATAA 2940 2881 AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTTATGTCTATAA 2940 2881 AGAAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTTATGTCTATAA 2940 2941 AGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT 3000 2941 AGTTTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGAT 3000 3001 GTGCCTGAATGTGAATTTGTGATATTCTGTCTTTTTCAGTAAATCACTTCGAACA 3060 3001 GTGCCTGAATGTGAAATTGTGATATTCTGTCTTTTTTCAGTAAATCACTTCGAACA 3060 3061 AAAAAAAAAA 3070 3061 AAAAAAAAAA 3070	NEULT 3. SEQUENCE 11.13 SEQUENCE 11.13 SEQUENCE 11.13 SEQUENCE 11.14 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQUENCE 11.15 SEQU

8 8 8 8

2341 TOANGAMAGGATCAACTICGACCCCCAACGATTCAAAGACCCCCCACCCCTTCTTG 2400 2341 TOANGAMAGGATCAACTICGACCCCCCAACGAATTCAAAGACCCCCCCTTCTTG 2400 2341 GTGTCAACCTCCGACCCCCCCCCCCCCCCCTTCCAACGACAACTCCTTTTCCT 2400 2401 GTGTCAACCTCCGACCCCCAACTTCCACCCTTTCCAACGACAACTCCTTTTCC 2460 2401 GTGTCAACCTCCGACCCCCAACTTCCACCCTTTCCACCCAACTTTTCC 2460 2401 GTGTCAACCTCCAACAATTCCAACACTTCCACCAACTTTCCCCAACACTTTTCC 2460 2401 GTGTCAACCTCCCAACAATTCCAACACTTCCACCAACTTTCCCCAACACTTTTCCACCA	RESULT 4 US-10-137-036-60 j Sequence 60, Application US/10137036 j Sequence 60, Application US/10137036 j GENERAL INFORMATION: j APPLICANT: Perera, Ranjan j APPLICANT: Eagleton, Clare APPLICANT: Lasham, Annette APPLICANT: Wood, Warion APPLICANT: Wood, Warion APPLICANT: Wisser, Elizabeth TITLE OF INVENTION: Compositions and Methods for the TITLE REFERENCE: 11000.103664 CURRENT APPLICATION NUMBER: US/10/137,036 CURRENT APPLICATION NUMBER: US/10/137,036 PRIOR APPLICATION NUMBER: PCT/NZ 01/00115 PRIOR PILING DATE: 2001-06-20 PRIOR PILING DATE: 2000-11-28
1261 CATCACCAGATCOGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCOGGAA 1320 1261 CATCACCAGATCOGCCAGTAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCOGGAA 1320 1321 CTCCGTATTTCTCTCACACCATAAGGGTAATATTAATTTAGTGGGAAAGGCAACCCAA 1380 1321 CTCCGTATTTCTCTCACACCACACCCAAACCCAA 1380 1321 CTCCGTATTTCTCTCCACACCCAAACCCCAAAAGGCCACACACCAAA 1380 1381 CCCACAAAAGGTCAATTCCCACACACCAAAAGACCACACAAAAGACCACAAAAAGATCAATTTCCCACACACA	TACGGCTTAGGGCGGATGTCGAGATCTCAGGAAGCCGGGAGGCGGGGAGGCGGGGGGGG

, B &

2427

1453

2487 1513 2547 2607

1633

1573

2667

1693 2727 1753 2787 1813 2847

1873 2907 1933 2967 1993

```
2968 CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAATTGTGTGTAT 3027
 1574 TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1814 GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGACCCCTTTTCTCACACAGTTGGCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1274 GAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGGACTGGG
                                                                                                                                      1334 GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACGC
                                                                                                                                                                                    CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGT
                                                                                                                                                                                                      CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGT
                                                                                                                                                                                                                                                     TCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTG
                                                                                                                                                                                                                                                                   1454 TCGTCAGCGTTCCAAAGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGG
                                                                                                                                                                                                                                                                                                                   ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                       ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATCCACATCGACTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGAGAGGACACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1634 TGATCCACATCGACTGCATCATGTTGGCCCACAACCCAGGCGGGAAAGAGAGACACACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1694 AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTCATGGTTCTTGGATTTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATACCAAGTICTICTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1934 GAAGTTACAAGATTTGTTGTTTTATGTCTTATAAAGTTTTGAGTCTTCTGCATACTGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1994 CACAGAATGTGTAAACGAAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT
                                                                                                                     GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3028 TCTGTCTTCTTTTCAGTAAATCACTTCGAACAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2054 TCTGTCTTCTTTTCAGTAAATCACTTCGAACAAAAAAA 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Methods for the
Gene Expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Sequence 60, Application US/10702319A | Sequence 60, Application US/10702319A | Publication No. US20050026162Al | GENERAL INFORMATION: APPLICANT: Rice, Stephen | APPLICANT: Rice, Stephen | APPLICANT: Ragleton, Clare | TITLE OF INVENTION: Compositions and Methods | TITLE OF INVENTION: Compositions of Gene Expl: FILE REFERENCE: 11000.103665 | CURRENT APPLICATION NUMBER: US/10/702,319A | CURRENT FILING DATE: 2003-11-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 5
US-10-702-319A-60
                       1214
                                                    2248
                                                                                                                                                                                    2368
                                                                                                                                                                                                                     1394
                                                                                                                                                                                                                                                    2428
                                                                                                                                                                                                                                                                                                                    2488
                                                                                                                                                                                                                                                                                                                                                                                    2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2908
                                                    8
                                                                                셤
                                                                                                                    8
                                                                                                                                           g
                                                                                                                                                                                    à
                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                      1467
                                                                                                                                                                                                                                                                                                                                                                                                      1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1153
                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTC 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2188 AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTG 2247
                                                                                                                                                                                                                                                                                                                                                                    493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    973
                                                                                                                                                                                                                                                                                                                                                                                                   GGGTTGGTGAACCGCAAAGTTCCTATATATGGAACCTCCACCACATACCTCCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGAAGAGAGAGAGAGAGAATGGGTTCGACCGGATCCGAGACCCCAGATGACCCCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGTCTCGGACGAGGGGGGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCATGGTCCTCAAGGCCGCCATCGAGCTCGACCTCCTCGAGATCATGGCCAAGGCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCTACTCCGTGCTCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGCTTAGCGCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACATGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                       GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCCACCATTATCTTATTTCTTTCTTTCTTTCTTTGCTCGAGTCTCGGGAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCCACCATTATCCGTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAAGAGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCATGGTCCTAAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGGGCGCGTTCCTCTCCACGGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGGGCGCTTCCTCCCCCGGGGGAAGTCGCGGGCCCAGCTCCCGACCCCGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGGTGCTCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCTTCGCGACCTCCCCGATGGCAAGGTCGAGGGGCTCTACGGCTTTAGCGCCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCCGACCCGCGATTC
                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                   Length 2096;
PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 09/598,401
PRIOR FILING DATE: 2000-06-20
PRIOR PLING DATE: 2000-02-24
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-35
PRIOR FILING DATE: 1999-03-25
NUMBER: OF SEQ ID NOS: 143
SOFTWARE: FBELSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                    GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGG
                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                   8;
                                                                                                                                                                                                                                                                   DB 6;
                                                                                                                                                                                                                                                                   Score 1255; DE
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 99.5%;
Matches 1655; Conservative
                                                                                                                                                                                                              ; ORGANISM: Eucalyptus grandis
US-10-137-036-60
                                                                                                                                                                                                                                                                                                                                                                                                     1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1094
                                                                                                                                                                                                                                                                                                                                    1408
                                                                                                                                                                                                                                                                                                                                                                   434
                                                                                                                                                                                                                                                                                                                                                                                                                                     494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2068
                                                                                                                                                                                                      TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음 강
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8 8
                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                윉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      $ B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        કે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원 상
```

2247

2187

2307

2427

1453

1393

2487 1513 2547 1573 2607 1633 2667 2727 2727

```
CATACCAAGTTCTTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1994 CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT
                                                                                                                                                                                                                                                                                                                     CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT
GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGGGGAATC
                                                         GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                           1334 GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                                                                CCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGT
                                                                                                                                                                                                                                                                                                                                                                                          TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTTCAGGGCTTCCAAGTCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATACCAAGTTCTTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGTTACAAGATTTGTTGTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
                                                                                                AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCCACCATTACTATGAAGAAGATACTG
                                                                                                              GAAACATACAAGGGCTTCGAGGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGG
                                                                                                                                                                                                                                                                               CCCAACGGATTGAAGACGCCCCACCCCTTCCTGGTCTCAAGCACGTCGGAGGGGACATGT
                                                                                                                                                                                                                                                                                                                                                                             ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTGTCTTCTTTTCAGTAAATCACTTCGAACAAAAAAAA 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2054 TCTGTCTTTTTTCAGTAAATCACTTCGAACAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 6
US-10-927-641-60
Sequence 60, Application US/10927641
Publication No. US20050244968A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3028
                                                                                                                            1214
                                                                                                                                                                                                                                                                                                1394
                                                                                                                                                                                                                                                                                                                                                                                2488
                                                                                                                                                                                                                                                                                                                                                                                                          1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2968
                                                                       1154
                                                                                                                                                         2248
                                                                                                                                                                                    1274
                                                                                                                                                                                                                                                                                                                           2428
                                                                                                                                                                                                                                                                                                                                                     1454
                                                                                                                                                                                                                                                                                                                                                                                                                                     2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2668
                  1094
                                             2128
                                                                                                    2188
                                                                                                                                                                                                              2308
                                                                                                                                                                                                                                                                     2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                   g
                                                                                                   P &
                                                                                                                                                                                 g
                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                   8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                      ò
                                                                                                                                                        ò
                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2007
                                                                                                                                                                                                                                                                                                                                                                                               1467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC 2127
                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAAGAGAGAGAGAGAGAATGGGTTCGACCGGCTCCGAGACCCAGATGACCCCGACC 1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   793
                                                                                                                                                                                                                                                                                                                                                                                                                       493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGGTCTCGCGGAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCCAGCTACTCCGTGCTCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCCGTGCTCACGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGTTGGTGAACGCAAAGTTCCTATATATCGAACCTCCACCATACCTCACTTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGTCTCGGACGAGGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCATGGTCTCAAGGCCGCCATCGAGCTCGACTCGTCTCAGAGATCATGGCCAAGGCCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGGGCGCGTTCCTCCACGGGGGAAATCGCGGGCACAGCTCCCGACCCCAGAACCCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGCCTCTACGGCTTAGCGCCCGGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGTCAATGGCATGCCTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGTCAATGGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGTTGGTGAACCGCAAAGTTCCTATATTCGAACCTCCACCATACCTCACTTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                          Length 2096;
                                                                                                                                                                                                                                                                                                                                                                     Indels
 PRIOR APPLICATION NUMBER: U.S. NO. 10/291,447
PRIOR FILING DATE: 2002-11-08
FRICH APPLICATION NUMBER: U.S. NO. 60/425,087
PRIOR PELLING DATE: 2002-11-08
PRIOR APPLICATION NUMBER: U.S. NO. 10/137,036
FRICH APPLICATION NUMBER: U.S. NO. 09/724,624
FRICH APPLICATION NUMBER: U.S. NO. 09/724,624
FRICH APPLICATION NUMBER: U.S. NO. 09/598,401
FRICH APPLICATION NUMBER: U.S. NO. 09/598,401
FRICH APPLICATION NUMBER: U.S. NO. 60/146,591
FRICH APPLICATION NUMBER: U.S. NO. 60/146,591
FRICH APPLICATION NUMBER: U.S. NO. 60/146,591
FRICH APPLICATION NUMBER: U.S. NO. 60/146,591
FRICH APPLICATION NUMBER: U.S. NO. 60/146,591
FRICH APPLICATION NUMBER: U.S. NO. 60/146,591
FRICH APPLICATION NUMBER: U.S. NO. 60/146,591
FRICH APPLICATION NUMBER: U.S. NO. 60/146,591
FRICH APPLICATION NUMBER: U.S. PATENT NO. 09/276,599
FRICH APPLICATION NUMBER: U.S. PATENT NO. 60/146,599
FRICH APPLICATION NUMBER: U.S. PATENT NO. 60/146,599
FRICH APPLICATION NUMBER: U.S. PATENT NO. 60/146,599
FRICH APPLICATION NUMBER: U.S. PATENT NO. 60/146,599
FRICH APPLICATION NUMBER: U.S. PATENT NO. 60/146,599
FRICH APPLICATION NUMBER: U.S. PATENT NO. 60/146,599
FRICH APPLICATION NUMBER: U.S. PATENT NO. 60/146,599
FRICH APPLICATION NUMBER: U.S. PATENT NO. 60/146,599
                                                                                                                                                                                                                                                                                                                                                                   .,
8
                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                          40.9%; Score 1255; D
99.5%; Pred. No. 0;
:ive 0; Mismatches
                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 99.5
Matches 1655; Conservative
                                                                                                                                                                                                                                                                                                                US-10-702-319A-60
                                                                                                                                                                                                                                                                        LENGTH: 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2068
                                                                                                                                                                                                                                                                                                                                                                                                1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1888
                                                                                                                                                                                                                                                                                                                                                                                                                          434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        914
                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 8 6 8 6 8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B & B & B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 6
                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

1813 2847 1873 2907 2967

1933

1993

3027

1333 2367 1393 2427 1453 2487

2247

2127

1093

2187

1213

```
1214 AACAAGATCTTTAACCGGGGAATGTCTGATCACTCCACCATTACTATGAAGAAGATACTG 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACAGAATGTGTAACGAAACGGCGTATATGGATGTGCCTGAATGATGGAAATTGTGATAT 3027
                                                                                                                              GACAAAATCCTCATGGAAAGCTGGTATTACCTGAAAGATGCGGTCCTTGAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCAGACACGAGCCTAGCGACCAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGTTCTTGGTCAAGAACGAGGACGAGGTCTCCATCGCCGCACTCAACTTGAAGTGAACCAG
                                                                                                                                                                                                                     1154 CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTC
                                                                                                                                                                                                                                                                  AACAAGATCTTTAACCGGGGAATCTCTGATCACTCCCACCATTACTATGAAGAAGATACTG
                                                                                                                                                                                                                                                                                                                                                                     1274 GAAACATACAAGGGCTTCGAGGCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                     1334 GCCGTGCTCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGACCATTGCGGGAAGTTCCTCAAGAACTGCTACGATGGGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1814 GITCATGGITCITGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1934 GAAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTGAGTCTTCTGCATACTGATTT
1948 ACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAACGCCCGGTGTGC
                 ACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGC
                                                                 AAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATCGCCGCACTCAACTTGATGAACCAG
                                                                                                                                                                                                CCATTCAACAAGGCGTACGGGATGACCGCGTTCGAGTATCATGGCACCGGACCCGCGATTC
                                                                                                                                                                                                                                                                                                                                      GAAACATACAAGGGCTTCGAGGCCCTCGAGACCGTGGTCGATGTCGGAGGCGGCACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                      GCCGTGCTCCAGCATGATCGTTGCCAAATACCCATCAATGAAAGGGATCAACTTCGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGCACGTCGGAGGCGACATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCAACGGATTGAAGACGCCCCACCCTTCCTGGTGTCAAGGACGTCGGAGGCGACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATGAAGTGGATATGCCATGACTGGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGACCATTGCGCGAAGTTCCTCAAGAACTGCTACGATGCGCTTCCCAACAATGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAGTITCGAGGCATITGGCCAAAGGGGCCGGATITCAGGGCTITCCAAGITCATGTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTTCGGCACTCACGTCATGGAGTTCCTGAAGACCGCTTGATCTGCTCCTCTGTGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTCATGGTTCTTGGATTTGAAAGGTCGTGAAGGAGCCCTTTTCTCACAGTTGGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATACCAAGTTCTTCTCATAAAAGGAAACAATAAGAAGCGACTGTATGATGGCGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGTTACAAGATTTGTTGTTTTATGTCTATAAAGTTTTTGAGTCTTCTGCATACTGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1574
                                974
                                                                 2008
                                                                                                 1034
                                                                                                                                2068
                                                                                                                                                                 1094
                                                                                                                                                                                                  2128
                                                                                                                                                                                                                                                                    2188
                                                                                                                                                                                                                                                                                                                                      2248
                                                                                                                                                                                                                                                                                                                                                                                                        2308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2968
                          셤
                                                              8
                                                                                        g
                                                                                                                                ઠે
                                                                                                                                                             g
                                                                                                                                                                                                  8
                                                                                                                                                                                                                            요
                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGTTGGTGAACCGCAAAGTTCCTATATATGGAACCTCCACCACCACATACCTCCACTACAAT 1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCCACCATTATCCGTTTATTCCTCTGCTTTCCTTTGCTCGAGTCTCGGGGAAGAGA 1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGAAGAGAGAGAGAGAAATGGGTTCGACCGGCTCCGAGACCCCAGATGACCCCGACC 1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGA 1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGGGCGCGTTCCTCTCCACGGGGAAATCGCGGCACAGCTCCCGACCCCAGAACCCCGAG 1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGC 1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               614 CCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGGGGTAGAGA 673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   734 CAAGTCTCGGAGGAGGAGGGGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCATGGTCCTCAAGGCCGCCATCGAGCTCGACCTCCTCGAGATCATGGCCAAGGCCGGG 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGAAGAGGAGAGAGAGAGAATGGGTTCGACCGGATCCGAGACCCAGATGACCCCGACC 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGGGCGCTTCCTCTCCCCGGGGGAAGTCGCGGCCCAGCTCCCGACCCCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTGCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCATGGTCCTAAAGGCCGCCATCGAGATCGACCTCCTCGAGATCATGGCCAAGGACGGG
      APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Eagleton, Clare
APPLICANT: Lasham, Annette
APPLICANT: Lasham, Annette
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
APPLICANT: Wood, Marion
FILE REFERENCE: 1000.1036c4
CURRENT APPLICATION NUMBER: US/10/927,641
CURRENT APPLICATION NUMBER: US/10/927,641
CURRENT APPLICATION NUMBER: PRIOR APPLICATION NUMBER: US/10/137,036
PRIOR FILING DATE: 2001-06-20
PRIOR PELING DATE: 2000-11-28
PRIOR PELING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: U.S. No. 09/598,401
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 2000-06-20
PRIOR PELING DATE: 1000-02-24
PRIOR PELING DATE: 1000-02-24
PRIOR PELING DATE: 1000-02-24
PRIOR PELING DATE: 1000-02-24
PRIOR PELING DATE: 1000-02-24
PRIOR PELING DATE: 1999-07-30
PRIOR PELING DATE: 1999-03-25
NUMBER OF SEQ ID NOS: 143
SEQ ID NO 60
LENGTH: 2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAGTCTCGGACGACGAGGCGAACCTCTTCGCCATGCAGCTGGCGAGCGCCTCCGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Score 1255; DE; Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 99.5%;
Matches 1655; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Eucalyptus grandis
US-10-927-641-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 6 8 6
```

ઠે

8

õ

2607

1633

2667

1693

2727

1753

2787

1813

2547 1573

1513

2847

1873

2907

2967

2702

2762

2882

요

```
1224 GCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATAAG 1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1284 AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTGAGICTTCTGCATACTGATTTCACAGAATGTGTAACGAAACGGCGTATATGGATGT 3002
                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/10703091

Publication No. US20040146904A1

GENERAL INFORMATION:

APPLICANT: PHILLIPS, JONATHAN

APPLICANT: BAGLETON, CLARE

TITLE OF INVENTION: VASCULAR-PREFERED PROMOTER SEQUENCES AND USES THEREOF

FILE REFERENCE: 044463-0263

CURRENT PLING DATE: 2003-11-07

PRIOR APPLICATION NUMBER: 60/425,087

PRIOR FILING DATE: 2003-11-07

PRIOR FILING DATE: 2002-11-08

SOFTWARE: PatentIN Ver. 3.2

SEQ ID NO 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGCGACTGTATGATGGCGCAAGTGGAAGTTACAAGATTTGTTGTTTTATGTCTATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCAAGCACGTCGGAGAGGCGACATGTTCGTCAAGGGAGAGGAGATGCCATTTTCATG
                                                                                                                                                                                      CAGGGCTTCCAAGTCATGTGCTGCGCTTTTCGGCACTCACGTCATGGAGTTCCTGAAGACC
                                                                                                                                                                                                                                                                                                             GCTTGATCTGCTCCTCTGTGGTGATGTTCATGGTTCTGGATTTGAAAGGTCGTGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCTTTTCTCACAGGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATAAG
                                                              864 AAGTGGATATGCCATGACTGAGTGACGACCATTGCGGGAAGTTCCTCAAGAACTGCTAC
                                                                                                                                GACACGAGCCTAGCGACCAAGAATGTGATCCACATCGACTGCATCATGTTGGCCCCACAAC
                                                                                                                                                                                                                                CCAGGCGGGAAAGAGGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                      AAGTGGATATGCCCATGACTGGAGTGACGACCATTGCGCGAAGTTCCTCAAGAACTGCTAC
                                                                                                            GATGCGCTTCCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 534;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
17.4%; Score 534; DB 8; Length 53
Best Local Similarity 100.0%; Pred. No. 3.9e-274;
Matches 534; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-10-703-091-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 8
US-10-703-091-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3063
                                                                                                                                                                                                                                                                                                                                                                                                                          2823
                                                                                                                                                                                                         984
                                                                                                                                                                                                                                                                                                                                                             2763
                                                      2463
                                                                                                                 2523
                                                                                                                                                                             2583
                                                                                                                                                                                                                                        2643
                                                                                                                                                                                                                                                                                                  2703
                        804
                                                                                                                                                924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                   à
                                                                           g
                                                                                                                 ò
                                                                                                                                         g
                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2344 ATGAAAGGGATCAACTTCGACC-GCCCCAACGGATTGAAGACGCCCCCACCCTTCCTGGT 2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2284 GTCGATGTCGGAGGCGGCACTGGGGCGGTGCTCAGCATGGTTGCCTAAATACCCATCA 2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2403 GTCAAGCACGTCGGAGGCGACATGTTCGTCAGCGTTCCAAAGGGAGATGCCATTTTCATG 2462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2224 ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGCCTCGAGACCGTG 2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             264 CAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCTACGGCTTAGCGCCGGTGCCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATCATGGCACCGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCAGCTACTCCGTGCTCACGTGCACCCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGCACTCAACTTGATGAACCAGGACAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1864 CAGCTCCCGACCCAGAACCCCGAGGCACCCGTCATGCTCGACCGGATCTTCCGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match 25.2%; Score 774; DB 7; Length 1630; Best Local Similarity 99.4%; Pred. No. 0; Matches 1194; Conservative 0; Mismatches 6; Indels
                                                                                                                                                         APPLICANT: HAVNKAla, IIkka
APPLICANT: HAVNKAla, IIkka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Madification of Plant Lignin Content
FILE REFERENCE: 11000.1003c3
CURRENT APPLICATION NUMBER: US/10/174,693
CURRENT FILING DATE: 2002-06-18
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR APPLICATION NUMBER: US 08/713,000
PRIOR PILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: US 09/169,789
PRIOR PILING DATE: 1998-10-09
PRIOR PILING DATE: 1998-10-09
PRIOR PILING DATE: 1998-10-09
PRIOR PILING DATE: 1998-10-09
PRIOR PILING DATE: 2000-07-12
NUMBER OF SEQ ID NOS: 407
SOFTWARE: PASTSEQ for Windows Version 3.0
LENGTH: 1630
         RESULT 7
US-10-174-693-107
; Sequence 107, Application US/10174693
; Publication No. US20030131373A1
; GENERAL INFORMATION:
; APPLICANT: Blokeberg, Leonard N.
                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
CRGANISM: Eucalyptus grandis
US-10-174-693-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       624
                                2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 6 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
```

ò

ઠે

1403

ö

Gaps

300

1518

360

1578

420

1638

```
Sequence 3, Application US/10703091
Sequence 3, Application US/10703091
Sequence 3, Application NO US20040146904A1
GENERAL INPORMATION:
TEGERAL INPORMATION:
APPLICANT: EAGLETON, CLARE
TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
FILE REFERENCE: 044463-0263
CURRENT APPLICATION NUMBER: US/10/703,091
CURRENT PILING DATE: 2003-11-08
NUMBER OF SEQ ID NOS: 8
SOFTWARE: PatentIN Ver. 3.2
SEQ ID NO 3
LENGTH: 306
TYPE: DNA
TYPE: DNA
TYPE: DNA
CURANISM: Eucalyptus grandis
US-10-703-091-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1458 TICACCGGTIGGAGTCAATGCCATGCGTGACGAATGTACTATTGGTGTAGGGTCCAATA 1517
                                                                                                                                                                                                                                                                       1579 CACTICAATCCCCACCATTATCCGTTTTATTCCTCTGCTTTCCTTTGCTCGAGTCTCG 1638
421 CACTICAATCCCACCACTTATCGGTTTTATTCCTCTGGCTTTGCTTGGAGTCTCG 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 Treacederregaereaargecarecereaceaargracararregreraegeceaara 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1459 TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                                      301 TCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                                                                                          1338 TICCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1518 TTTTGCGGGGGGGTTGGTGAACCGCAAGTTCCTATATATCGAACCTCCACCACCATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1578 TCACTTCAATCCCCACCATTTATCCTTTTCCTCTGCTTTCCTTTGCTCGAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 reacticaarceeacarritareegrifiariteerereerriteerreagrere
                                                                                      1519 TITGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACATACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 TTCCATAAACCCCTGATTAATTTGGTGGAAAGCGACAGCCAACCCACAAAAGGTCAGAT
                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
10.0%; Score 306; DB 8; Le:
Best Local Similarity 100.0%; Pred. No. 4.7e-152;
Matches 306; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1638 GCGGAA 1643
                                                                                                                                                                                                                                                                                                                                                 1639 CGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                  481 CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
US-10-703-091-3
1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                         g
                                                                  ò
                                                                                          셤
                                                                                                                          ઠે
                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
US-10-703-091-2

i Sequence 2, Application US/10703091

j Sequence 2, Application No. US20040146904A1

j GENERAL INFORMATION:
    AFPLICANT: PHILLIPS, CLARE
    TILE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
    FILE REFERENCE: 04443-0263

j CURRENT APPLICATION NUMBER: 60/425,087

pRIOR APPLICATION NUMBER: 60/425,087

pRIOR APPLICATION NUMBER: 60/425,087

pRIOR APPLICATION NUMBER: 60/425,087

pRIOR PILING DATE: 2002-11-08

NUMBER OF SEQ ID NOS: 8

SOFTWARE: PARCHIN Ver. 3.2
                                                                                                                       1289
                                                                                                                                                                                                                                                                                                                                 1469
                                                                                                                                                                                          CTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGA 1409
                                                                                                                                                                                                                                                                                                                                                                                                      AGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGG 1529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACATACCTCACTTCAATCC 1589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1219 AAAGAGCACAAAAGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT 1338
                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 AAAGAGCACAAAGAGGACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT 180
                                                                      CAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCAAA 120
                                                                                                                                       301 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                          361 AGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTGCGGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGCACGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATA
                                                                                                                                                                                                            CTGATTAATTTTGGTGGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGA
                                                                                                                                                                                                                                                                                                                               GAGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACCGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421 GTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCACTTCAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1159 GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAAGGCGCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCACCATTATCGGTTTTATTTCCTCTGCTTTCCTTTGCTCGGGACTCTCGGGAA 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 8; Length 485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 485; DB 8; L/
Pred. No. 6.8e-248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 15.8*; Score 485; DB Best Local Similarity 100.0*; Pred. No. 6.8 Matches 485; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
CRGANISM: Eucalyptus grandis
US-10-703-091-2
                                                  1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                     1230
                                                                                                                                                     121
                                                                                                                                                                                          1290
                                                                                                                                                                                                                                                           1350
                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                 1410
                                                                                                                                                                                                                                                                                                                                                                                                      1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1279
                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8
                                                                                                                                              g
                                                                                                                                                                                                              ያ ያ
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
         요
                                                ò
                                                                           g
                                                                                                              ò
                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ሯ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             &
```

1397

9

ö

1457

120

1577

240

1637

g

```
TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACACTTCCATAAACCCCTGATT 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    158 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCCACAAAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           218 cgarccaaccrrrccrraacaagarcarcaccagarcggccagraagggraararraarr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  278 raacaaaragcrcrrgraccgggaacrccgrarrrcrcrcacrrccaraaaccccrgarr
                                                                                                                                                                                                                                                                                                                                                             1116 CATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                   98 CATCTTCACAAAAAGCCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                1176 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCCAGATTGCAAAGAGCACAAAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1236 CGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATAATTTAATT
                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                  ö
PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 60/146,591 PRIOR FILING DATE: 1999-07-30 PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 09/276,599 PRIOR FILING DATE: 1999-03-25 NUMBER OF SEQ ID NOS: 143 SOPTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 12 LENGTH: 661
                                                                                                                                                                                                                                                                     Length 661;
                                                                                                                                                                                                                                                                                                                1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-702-319A-12
Sequence 12, Application US/10702319A
Publication No. US20050026162A1
GENERAL INFORMATION:
APPLICAMY: Perera, Ranjan
APPLICAMY: Rice, Stephen
APPLICAMY: Bajeton, Clare
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c5
                                                                                                                                                                                                                                                                   Score 272; DB 6; 1
Pred. No. 7.7e-134;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                398 GAGAGAGAGAGAGAGAGAGAG 420
                                                                                                                                                                                                                                                                       8.9%;
                                                                                                                                                                                    ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-10-137-036-12
                                                                                                                                                                                                                                                                                                                    Matches 322; Conservative
                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1416
                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1411 AGAGAGAGAGAGAGAGAGAGAGAGTTTTCTCTCTATATTCTGGTTCACGGTTGGA 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TIGGIGAACCGCAAAGIICCTATATATCGAACCICCACCACCATACCICACTICAAICCC 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 TTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCATACCTCACTTCAATCCC 240
                                                                                                       Sequence 4, Application US/10703091

Publication No. US20040146904A1

GENERAL INFORMATION:
APPLICANT: PHILLIPS, JONATHAN
APPLICANT: PATILIPS, JONATHAN
APPLICANT: PATILIPS, JONATHAN
TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
FILE REFERENCE: 044463-0263
CURRENT PILING DATE: 2003-11-07
PRIOR APPLICATION NUMBER: 60/425,087
PRIOR FILING DATE: 2003-11-08
NUMBER OF SEQ IN NOS: 8
SOFTWARE: PATENTIN NOS: 8
SOFTWARE: PATENTIN NOS: 8
SOFTWARE: PATENTIN NOS: 8
SOFTWARE: PATENTIN OF: 3.2
SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 AGAGAGAGAGAGAGAGAGAGAGAGAGATTTCTCTCTATATTCTGGTTCACCGGTTGGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Grcaargecargecreacgaargracararregreraggerccaararrrecggaggg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATATTTTGCGGGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1351 TGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCCACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGATGTCATCCACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTCGCGGAA 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Precera, Ranjan
APPLICANT: Rice, Stephen
APPLICANT: Rice, Stephen
APPLICANT: Easlan, Annette
APPLICANT: Lasham, Annette
APPLICANT: Lasham, Annette
APPLICANT: Uses. Blizabeth
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Expression
FILE REFERENCE: 11000.1036c4
CURRENT APPLICATION NUMBER: US/10/137,036
CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: PCT/NZ 01/00115
PRIOR PLING DATE: 2001-06-20
PRIOR APPLICATION NUMBER: U.S. No. US20030101478A1 09/724,624
PRIOR PLING DATE: 2000-11-28
PRIOR FILING DATE: 2000-06-20
PRIOR APPLICATION NUMBER: PCT/NZ00/00018
PRIOR FILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: PCT/NZ00/00018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9.5%; Score 293; DB 8; Length 293; 100.0%; Pred. No. 4.3e-145; tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
US-10-137-036-12
'Sequence 12, Application US/10137036
'Publication No. US20030101478A1
'GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 293
TYPE: DNA
ORGANISM: Eucalyptus grandis
US-10-703-091-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 100. Matches 293; Conservative
                    301 GCGGAA 306
                                                                                   RESULT 11
US-10-703-091-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
```

g

ò 셤

g ð g ò g ઠ

ò

1415

337

1175

ö

1295

277

1235

us-10-702-319a-113.olig.rnpbm

```
셤
                                                                                                                                                         ò
                                                                                                                                                                                              g
                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                      1175
                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTTCCATAAACCCCCTGATT 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       338 AATTIGGIGGGAAAGCGACAGCCACAAAAGGICAGAIGICAICCACCACGAGAGAA 397
                                                                                                                                                                                                                                                                                                                                       158 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCA
                                                                                                                                                                                                      1116 CATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                                                                                                                                                                                                                                                                                             GACGATGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCA
                                                                                                                                                                                                                                                  CATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBSEACH INFURMATION:
SUBSEACH INFURMATION:
APPLICANT: Rice, Stephen
APPLICANT: Eagleton, Clare
APPLICANT: Eagleton, Clare
APPLICANT: Lasham, Annette
APPLICANT: Lasham, Annette
APPLICANT: User, Elizabeth
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Compositions of Gene Expression
FILE REFERENCE: 11000.1036c4
CURRENT APPLICATION NUMBER: US/10/927,641
CURRENT FILING DATE: 2004-08-27
PRIOR APPLICATION NUMBER: D02-04-30
PRIOR PILING DATE: 2000-04-30
PRIOR PILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 1099-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
PRIOR FILING DATE: 1999-07-30
                                                                                                                                                           Gaps
                                                                                                                                                           ö
                                                                                                            Length 661;
                                                                                                                                                         1; Indels
                                                                                                          Score 272; DB 9; I
Pred. No. 7.7e-134;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGAGAGAGAGAGAGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 12, Application US/10927641; Publication No. US20050244968A1; GENERAL INFORMATION:
                                                                                                            Query Match
Best Local Similarity 99.7%;
Matches 322; Conservative
                     ; TYPE: DNA; CACALYPTUB Grandis
; ORGANISM: EucalyPtus grandis
US-10-702-319A-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Eucalyptus grandis
LENGTH: 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1356
                                                                                                                                                                                                                                                                                             1176
                                                                                                                                                                                                                                                                                                                                                                                      1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           398
                                                                                                                                                                                                                                                86
                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

DB 10; Length 661;

Score 272;

8.98;

Query Match

```
Sequence 5, Application US/10703091
; Dublication No. US20040146904A1
; GENERAL INFORMATION:
APPLICANT: PHILLIPS, JONATHAN
; APPLICANT: EAGLETON, CLARE
; TITLE OF INVENTION: VASCULAR-PREFERRED PROMOTER SEQUENCES AND USES THEREOF
; CURRENT APPLICATION NUMBER: US/10/703,091
; CURRENT APPLICATION NUMBER: US/10/703,091
; CURRENT APPLICATION NUMBER: 60/425,087
; PRIOR APPLICATION NUMBER: 60/425,087
; PRIOR PILING DATE: 2002-11-08
; SEQ ID NOS: 8
; SEQ ID NO 5
; LENGTH: 119
                                                                                                                                                                                                                                                                                    1295
                                                                                                                                                                                                                                                                                                                                                                                       1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1415
                          ö
                                                                                                                                                                              1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                           157
                                                                                                                                                                                                                                 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1585 AATCCCCACCATTTATCGTTTTATTTCCTGTTCCTTTGCTTGGTCTCGGGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 AATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTTCCTTTGCTTTGCTCGAGGAA 119
                                                                                                     98 CATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGGT
                                                                                                                                                                                1176 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAAAAGAGCA
                                                                                                                                                                                                           158 GACGATGGCCCCTCAGGGAAATTAAGGCGCCAACCCAGATTGCAAAGAGCACAAAGAGCA
                                                                                                                                                                                                                                                                                      1236 CGACCCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAGTAAGGGTAATATTAATT
                                                                                                                                                                                                                                                                                                                 1296 TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTTCCATAAACCCCTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                          278 TAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACTTCCATAAACCCCTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1525 GGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACCTCCACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GGAGGGTTGGTGAACGCAAAGTTCCTATATATCGAACCTCCACCACCACCATACCTCCCTTC
                                                                             1116 CATGTTGACAAAAAGGCTGATTAGTATGATCTTGGAGTTGTTGGTGCAAATTTGCAAGCT
                          0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
3.9%; Score 119; DB 8; L
Best Local Similarity 100.0%; Pred. No. 6.2e-52;
Matches 119; Conservative 0; Mismatches 0;
99.7%; Pred. No. 7.7e-134; tive 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Search completed: November 1, 2006, 13:32:37 Job time : 3575 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1416 GAGAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                398 GAGAGAGAGAGAGAGAGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Eucalyptus grandis
US-10-703-091-5
Best Local Similarity 99.7
Matches 322; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-703-091-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
```

THIS PAGE LEFT BLANK

```
107, App
78, Appl
80, Appl
106, App
215547,
237674,
5916, Ap
11276, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       105, App
23, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24951, A
3402, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10915, Ā
                                                                                                           ; Search time 736 Seconds (without alignments) 8093.506 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /EMC_Celerra_SIDS3/prodata/2/pubpna/US09_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US06_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US06_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US08_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US10_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US10_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US11_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US11_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US11_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US11_NEW_PUB.seq:*
/EMC_Celerra_SIDS3/prodata/2/pubpna/US11_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                             1 agcaccatcagcaaaaaata.......acttcgaacaaaaaaaaa 3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                   3194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-11-397-533-107
US-11-229-856-78
US-11-229-856-78
US-11-397-533-106
US-11-397-533-106
US-11-266-748A-237674
US-11-266-748A-237674
US-11-218-305-5916
US-11-218-305-5916
US-10-449-902-14951
US-10-649-902-24951
US-10-649-902-24951
US-10-649-902-24951
US-10-649-902-24951
US-10-649-902-24951
US-10-449-902-7413
US-11-397-533-105
US-11-397-533-105
US-11-218-305-18848
US-11-218-305-18848
US-11-218-305-18848
                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                         2461376 seqs, 970166171 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Published Applications NA New:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                               November 1, 2006, 12:37:38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Listing first 45 summaries
                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                OLIGO_NUC
Gapop_60.0 , Gapext 60.0
                                                                                                                                                                                   US-10-702-319A-113
3070
                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1413
2002
2168
2168
2411
120502
215126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    584
594
607
1587
1642
2103
2115
                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                           Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                              Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Result
No.
                                                                                                                                                                                         Title:
```

	ALIGNMENTS						
Sequence 403, App	US-11-397-533-403	4 7	41	1.1	33	c 45	
	-397-533-1	4	41	1.1	33	C 44	
7	US-10-833-833-77	m	132044	1.1	34	4	
Sequence 77, Appl	US-10-833-833-77	43 6	1320443	1.1	34	42	
Sequence 552, App	US-10-669-920-552		310122	1.1	34	41	
832	US-10-540-898-832	4	231004	1.1	34	40	
Sequence 119, App	US-10-540-898-119		22800	1.1	34	c 39	
	US-10-669-920-712	-	174518	1.1	34	38	
_	US-10-540-898-371	_	155462	1.1	34	37	
1292,	US-10-669-920-1292		153740	1.1	34	36	
61421	US-11-266-748A-61421		134515	1.1	34	c 35	
24791	US-11-266-748A-24791	8	126080	1.1	34	c 34	
	US-10-540-898-826	-	118864	1.1	34	33	
239,	US-10-540-898-239		100864	1.1	34	32	
	US-10-540-898-585	9	100610	1.1	34	c 31	
Sequence 103, App	US-11-330-726-103	7	96597	1.1	34	30	
Sequence 214, App	US-11-330-726-214	7	96589	1.1	34	c 29	
Q.	US-10-833-833-7	9	82928	1.1	34	~	
Sequence 1416, Ap	US-10-669-920-1416	ø	64482	1.1	34	27	
Sequence 483, App	US-10-539-228-483	9	61396	1.1	34	56	
Sequence 395, App	US-10-539-228-395	9	54037	1.1	34	c 25	
Seguence 369, App	US-10-539-228-369		53828	7.7	34	c 24	

```
CTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATC 2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1924 GCCAGCTACTCCGTGCTCACGTGCACCTCCGCGACCTCCCCGATGGCAAGGTCGAGCGG 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCGGCTGCTG 1923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             264 caecreceaececeaeaececeaegeaececearecrecaececearerreceaeceaecrecre 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           324 eccaectactecerecteacerecadacerecereceses 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1864 CAGCICCCGACCCAGAACCCCGAGGCACCCGICAIGCICGACCGGAICI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                               APPLICANT: Bloksberg, Leonard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 774; DB Pred. No. 0; Mismatches
                                                                                                                                                                                                                                                            TITLE DC INVENTION: MODITICATION OF PLANTED:
FILE REPERRENCE: 11000.1003c6
CURRENT APPLICATION NUMBER: US/11/397,533
CURRENT FILING DATE: 2006-04-03
PRIOR PLING DATE: 1997-11-21
PRIOR PLING DATE: 1996-09-11
PRIOR PLING DATE: 1996-09-11
PRIOR PLING DATE: 1996-09-11
PRIOR PLING DATE: 1996-09-14
PRIOR FILING DATE: 1996-09-14
PRIOR PRILING DATE: 1996-09-14
PRIOR PRILING DATE: 1999-07-14
PRIOR PRILING DATE: 1999-07-14
PRIOR PRILING DATE: 1999-07-14
PRIOR PRILING DATE: 2000-07-12
PRIOR PLING DATE: 2000-07-12
PRIOR PLING DATE: 2000-07-12
PRIOR PLING DATE: 2000-07-12
PRIOR PRIOR PRILING DATE: 2000-07-12
PRIOR PLING DATE: 2000-07-12
PRIOR PLING DATE: 2000-07-12
PRIOR PLING DATE: 2000-07-13
PRIOR PLING DATE: 2000-07-13
PRIOR PLING DATE: 2000-07-13
PRIOR PLING DATE: 2000-07-13
PRIOR PLING DATE: 2000-07-13
PRIOR PLING DATE: 2000-07-13
PRIOR DATE: 1990-07-14
PRIOR PLING DATE: 2000-07-12
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR PLING DATE: 2000-07-12
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR PRIVERIES DATE: 2000-07-12
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-07-14
PRIOR DATE: 1990-09-10
PRIOR DATE: 1990-09-11
Sequence 107, Application US/11397533
Publication No. US20060183895A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 25.2%;
Best Local Similarity 99.4%;
Matches 1194; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM: Eucalyptus grandis US-11-397-533-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
```

Sequence

US-10-669-920-226

```
RESULT 3
US-11-229-856-80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGGGCTTCCAAGTCATGTGCTGCGCTTTCGGCACTCACGTCATGGAGTTCCTGAAGACC 2762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACACGAGCCTAGCGACCAAGAATGTGATCCACTCGCATCATCTTGCCCCCACAAC 2642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GICAAGCACGICGGAGGCGACAIGITCGICAGGGITCCAAAGGGAGATGCCAITITCAIG 2462
                                                                                                                                                                                                                                2223
                                                                                                                                                                                                                                                                                                                          2283
                                                                                                                                                                                                                                                                                                                                                                                                                2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2104 GATGCGGTCCTTGAAGGCGGAATCCCATTCAACAAGGCGTACGGGATGACCGCGTTCGAG 2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      923
                                                                                                                                                                                                                                                                            623
                                                                                                                                                                                                                                                                                                                                                                     683
                                                                                                                                                                                                                                                                                                                                                                                                                                         803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               863
                                                                                                                                                                                  563
                                                                        GCCCTTTTCTCACAGTTGGCTTCGGCATACCAAGTTCTTCTCATAAAAGGAAACAATAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2883 AAGCGACHGTATGATGGCGCAACHGGAAGTTACAAGATHTGTTGTTTTATGTCTATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTGAGTCTTCTGCATACTGATTTCACAGAATGTGTAAACGAAACGGCGTATATGGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGGGGAAAGAGAGACACAGAAGGAGTTCGAGGCATTGGCCAAAGGGGCCGGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGTGGATATGCCATGACTGGAGTGACGACCATTGCGGGAAGTTCCTCAAGAACTGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGCGGTTCCCCAACAATGGAAAGGTGATCGTTGCAGAGTGCGTACTCCCTGTGTACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATCATGGCACCGGACCCGCGATTCAACAAGATCTTTAACCGGGGAATGTCTGATCACC
                                                                                                                                                                                                                                                      ACCATTACTATGAAGAAGATACTGGAAACATACAAGGGCTTCGAGGGCTCGAGACCGTG
                                                                                                                                                                                                                                                                                                                                                  grosarcrosassesses en estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas est
                                                                                                                                                                 CTCTACGGCTTAGCGCCGGTGTGCAAGTTCTTGGTCAAGAACGAGGACGGGGTCTCCATC
                                                GCCGCACTCAACTTGATGAACCAGGACAAAATCCTCATGGAAAGCTGGTATTACCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          À 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2583 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             804
                                                                                                                                                                                                                                               2164
                                                                                                                                                                                                                                                                                                                                                                                                                                 2284
                                                                                                                                                                                                                                                                                                                                        2224
                                                                                                                                                                                                   504
```

ò

중 음

q

ኝ ස ኝ

8 & 8

ð

8 6 8 6 8 6

8 8

À 1464

1464

g &

8 8

g

ብ &

ò

```
1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1219 AAAGAGGACAAAAGGGACGCAACCTTTCCTTAACAAGATCATCACCAGATCGGCCAG 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1459 TCACCGGTTGGAGTCAATGGCATGCGTGAATGTACATATTGGTGTAGGGTCCAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGCGGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATGGAACCTTCCACCATACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAGGGTAATATTAATTTAACAAATAGCTCTTGTACCGGGAACTCCGTATTTCTCTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1159 GTGCAAATTTGCAAGCTGACGATGGCCCCTCAGGGAAATTAAGGCGCCCAACCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                               .
0
                                                                                                                                                                                                                                                                                                                                                                                                 15.8%; Score 485; DB 8; Length 485; ilarity 100.0%; Pred. No. 6.6e-243; Conservative 0; Mismatches 0; Indels
                                                     APPLICANT: FORSTER, RICHARD L.
APPLICANT: ROTTANN, WILLIAM H.
APPLICANT: ROTTANN, WILLIAM H.
APPLICANT: CONNETT, MARIE B.
APPLICANT: SANDERS, PAUL
APPLICANT: ZHANG, GRRY
APPLICANT: FITZGERALD, SANDRA JOANNE
APPLICANT: FITZGERALD, SANDRA JOANNE
APPLICANT: FITZGERALD, SANDRA JOANNE
APPLICANT: FITZGERALD, SANDRA JOANNE
TITLE OF INVENTION: MODIFICATION OF PLANT LIGNIN CONTENT
FILE REFERENCE: 044463-0441
CURRENT APPLICATION NUMBER: 10/946,650
FRIOR PLILING DATE: 2004-09-22
FRIOR PLILING DATE: 2004-09-22
FRIOR FILING DATE: 2004-09-22
NUMBER OF SEQ ID NOS: 86
SOFTWARE: PALENTIN VEY: 3.3
SEQ ID NO 78
LIGHTH: 485
LIGHTH: 485
RESULT 2
US-11-229-856-78
Sequence 78, Application US/11229856
Publication No. US20060130183A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
CORGANISM: Eucalyptus grandis
US-11-229-856-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAA 485
                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                      485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local
Matches 48
```

356

```
1897 ATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGC 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           297 ATGCTCGACCGGATCTTCCGGCTGCTGCTGCTACTCCGTGCTCACGTGCACCCTCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       311 ATGCTCGACCGGATCTTCCGGCTGCTGGCCAGCTACTCCGTGCTCACGTGCACCCTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1957 GACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCCGGTGTGC 2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1957 GACCICCCGAIGGCAAGGICGAGCGGCICIACGGCTTAGCGCCGGIGIGC 2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             371 GACCTCCCCGATGGCAAGGTCGAGCGGCTCTACGGCTTAGCGCCGGTGTGC 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
US-11-397-533-24

i Sequence 24, Application US/11397533

i Sequence 24, Application US/11397533

i Publication No. U320060183895A1

i GENERAL INFORMATION:
    APPLICANT: Blokaberg, Leonard N.
    APPLICANT: Blokaberg, Leonard N.
    APPLICANT: Havukkala, Ilkka
    TITLE OF INVENTION: Materials and Methods for the
    TITLE OF INVENTION: Materials and Methods for the
    TITLE OF INVENTION: Materials and Methods for the
    TITLE OF INVENTION: Materials and Methods for the
    FILE REPRENCE: 11000.1003c6
    CURRENT FILING DATE: 2006-04-03
    PRIOR APPLICATION NUMBER: US 08/975,316
    PRIOR PILING DATE: 1996-09-11
    PRIOR PILING DATE: 1996-09-11
    PRIOR PILING DATE: 1996-09-11
    PRIOR PILING DATE: 1998-07-14
    PRIOR PILING DATE: 1999-07-14
    PRIOR PILING DATE: 2000-07-12
    PRIOR PILING DATE: 2000-07-12
    PRIOR PILING DATE: 2000-07-12
    PRIOR PILING DATE: 2002-06-18
    NUMBER: OF SEQ ID NOS: 407
    SOFTWARE: FRAEESC for Windows Version 3.0
    SEQ ID NO 24
    LENGTH: A21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
3.6%; Score 111; DB 7; I
Best Local Similarity 100.0%; Pred. No. 3.6e-47;
Matches 111; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 111; DB 7; I
Pred. No. 3.6e-47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 3.6%; Score 111; DB Best Local Similarity 100.0%; Pred. No. 3.6 Matches 111; Conservative 0; Mismatches
                                    PRIOR FILING DATE: 1999-07-14
PRIOR APPLICATION NUMBER: US 09/615,192
PRIOR PILING DATE: 2000-07-12
PRIOR PILING DATE: 2002-06-18
NUMBER OF SEQ ID NOS: 407
SOFTWARE: FastSEQ for Windows Version 3.0
SERIOR DIO 106
LENGTH: 407
PRIOR APPLICATION NUMBER: US 60/143,833
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TYPE: DNA
; ORGANISM: Eucalyptus grandis
US-11-397-533-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: Eucalyptus grandis
US-11-397-533-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1338 TTCCATAAACCCCTGATTAATTTGGTGGGAAAGCGACAGCCAACCCACAAAAGGTCAGAT 1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1458 TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA 1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITIGCGGGAGGGTTGGTGAACCGCAAAGTTCCTATATATCGAACCTCCACCACCATACC 1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1578 TCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTC 1637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 TTCACCGGTTGGAGTCAATGGCATGCGTGACGAATGTACATATTGGTGTAGGGTCCAATA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 TCACTTCAATCCCCACCATTTATCCGTTTTATTTCCTCTGCTTTCCTTTGCTCGAGTCTC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 rifigogogogogofiografica a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a deficia a defic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 Trecaraaaccecrearraarrregregeaaacceacaeceacceacaaaacereaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-11-397-533-106

Sequence 106, Application US/11397533

Sequence 106, Application US/11397533

Publication NO.002:
GENERAL INFORMATION:
APPLICANT: Blokeberg, Leenard N.
APPLICANT: Havukkala, Ilkka
TITLE OF INVENTION: Materials and Methods for the
TITLE OF INVENTION: Modification of Plant Lignin Content;
FILE REPERENCE: 11000.10036
CURRENT APPLICATION NUMBER: US/11/397,533
CURRENT FILING DATE: 1997-11-21
PRIOR APPLICATION NUMBER: US 08/975,316
PRIOR PLILOR DATE: 1997-11-21
PRIOR PLILOR DATE: 1998-10-09

PRIOR PLILOR DATE: 1998-10-09

PRIOR FILING DATE: 1998-10-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 10.0%; Score 306; DB 8; Length 306; Best Local Similarity 100.0%; Pred. No. 3.1e-149; Matches 306; Conservative 0; Mismatches 0; Indels
                                                                                                                   APPLICANT FORCERT, RICHARD L.
APPLICANT: ROTTWANN, WILLIAM H.
APPLICANT: ROTTWANN, WILLIAM H.
APPLICANT: CONNETT, MARIE B.
APPLICANT: SANDERS, PAUL
APPLICANT: ZHANG, GARY
APPLICANT: ZHANG, GARY
APPLICANT: ZHANG, GARY
TILLE REFERENCE: 044463-0441
FILLE REFERENCE: 044463-041
CURRENT APPLICANTON WUMBER: US/11/229,856
CURRENT APPLICATION WUMBER: 10/946,650
PRIOR APPLICATION WUMBER: 10/946,650
PRIOR APPLICATION NUMBER: 10/946,650
PRIOR PLILING DATE: 2004-09-22
PRIOR PLILING DATE: 2004-09-22
PRIOR PLILING DATE: 2004-09-22
NUMBER OF SEQ. ID NOS: 86
SOFTWARE: PALENTIN VOR: 3.3
Application US/11229856
                                              Publication No. US20060130183A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Eucalyptus grandis
US-11-229-856-80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGGAA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301 GCGGAA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 80
LENGTH: 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
```

셤

ઠ

a

ò

셤

ò

g

ò

d

8

```
US-11-266-748A-215547

US-11-266-748A-215547

Sequence 215547, Application US/11266748A

Publication No. US20060134663A1

GENERAL INFORMATION:

APPLICANT: Harkin, Paul

APPLICANT: Johnston, Patrick

APPLICANT: Mulligan, Karl

TITLE OF INVENTION: Transcriptome Microarray Technology and
TITLE OF INVENTION: Transcriptome Microarray Technology and
TITLE OF INVENTION: Transcriptome Microarray Technology and
TITLE OF INVENTION: Transcriptome Microarray Technology and
TITLE OF INVENTION: Methods of Using the Same
FILE REFERENCE: 55815-0102 (319189)

CURRENT APPLICATION NUMBER: EP 04105482.6

PRIOR APPLICATION NUMBER: EP 04105482.6

PRIOR FILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2004-11-03

PRIOR PILING DATE: 2005-07-18

NUMBER: PETENTON NUMBER: US 60/662,276

PRIOR PILING DATE: 2005-07-18

NUMBER: PETENTON NUMBER: US 60/700,293

PRIOR PILING DATE: 2005-07-18

NUMBER: PETENTON NUMBER: US 60/700,293

PRIOR PILING DATE: 2005-07-18

NUMBER: PETENTON NUMBER: US 60/700,293

PRIOR PILING DATE: 2005-07-18

NUMBER: PETENTON NUMBER: US 60/700,293

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18

PRIOR PILING DATE: 2005-07-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (268)..(268)
OTHER INFORMATION: n is a, c, g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME KEY: misc feature
LOCATION: (160)..(160)
OTHER INFORMATION: n is a, c, g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ຫ້
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (128)..(132)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (152)..(152)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (211)..(211)
OTHER INFORMATION: n is a, c, 9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
LOCATION: (234)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (134)..(135)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (149)...(149)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (221)...(221)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature LOCATION: (221)..(221)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
LOCATION: (329)..(329)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Homo Sapiens
US-11-266-748A-215547
```

```
NAME/KEY: misc feature
LOCATION: (475)..(475)
OTHER INFORMATION: n is a, c, g, or
OTHER INFORMATION: n is a, c, g, or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (400)..(400)
OTHER INFORMATION: n is a, c, g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ör
                                                                                                                                                                                                                                              or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (428)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (435)..(435)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ຫ້
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc feature
LOCATION: (413)...(413)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (368)...(368)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                   FEATURE:
NAME/KEY: misc_feature
LOCATION: (389). (389)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (392)..(392)
OTHER INFORMATION: n is a, C, 9,
                                                                                                                                                                                                                                                ຫ້
                                                                                                                                                                   ຫ້
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: (470)..(470)
OTHER INFORMATION: n is a, C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (407)..(407)
OTHER INFORMATION: n is a, C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
LOCATION: (423)...(423)
OTHER INFORMATION: n is a, C,
FEATURE:
                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (364)..(364)
OTHER INFORMATION: n is a, c,
                                        NAME/KEY: misc_feature
LOCATION: (334)...(334)
OTHER INFORMATION: n is a, c
FEATURE: misc_feature
LOCATION: (351)...(351)
OTHER INFORMATION: n is a, c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COCATION: (452)..(453)
OTHER INFORMATION: n is a,
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (465)..(466)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (458)..(458)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (398)..(398)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc feature
LOCATION: (470)..(470)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (452)..(453)
```

```
TITLE OF INVENTION: Transcriptome Microarray Technology and TITLE OF INVENTION: Methods of Using the Same FILE REPRENCE: 55815-0102 (319189)
CURRENT APPLICATION NUMBER: US/11/266,748A
CURRENT FILING DATE: 2005-11-03
FRIOR PEDLICATION NUMBER: EP 04105492.
FRIOR PELLING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR APPLICATION NUMBER: EP 04105482.6
FRIOR FILING DATE: 2004-11-03
FRIOR PILING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR PELLING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR FILING DATE: 2004-11-03
FRIOR FILING DATE: 2005-01-14
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
FRIOR FILING DATE: 2005-07-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ör
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ϋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: (23)...(26)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Homo Sapiens
FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
NAME/KEY: misc_feature
LOCATION: (5)..(5)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (7)...(7)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (9). (9)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCATION: (13)...(13)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION: (38). (38)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: (16)...(18)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 1.1%; Score 35; DB 8; Length 601; Best Local Similarity 100.0%; Pred. No. 2.2e-07; Matches 35; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 109
                                                                                                                                                                                                                                                                                                                                                                      or t
                                                                                       g, or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or
t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAME/KEY: misc feature
LOCATION: (569)..(570)
OTHER INFORMATION: n is a, c, g, or
                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ör
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ი
დ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ຫ້
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
NAME/KEX: misc feature
LOCATION: (547)..(547)
OTHER INFORMATION: n is a, c,
                                    NAME/KEY: misc feature
LOCATION: (480)..(480)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
NAME/KEY: misc feature
LOCATION: (509)..(509)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (552)..(554)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (564)..(564)
OTHER INFORMATION: n is a, c,
                                                                                                         FEATURE:
NAME/KEY: misc feature
LOCATION: (485)...(485)
OTHER INFORMATION: n is a, c
FEATURE:
NAME/KEY: misc feature
LOCATION: (497)...(497)
OTHER INFORMATION: n is a, c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: misc_feature
LOCATION: (560)...(560)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
LOCATION: (506)..(506)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (517)..(518)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (533)..(536)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (556)..(558)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
NAME/KEY: misc feature
LOCATION: (576)..(579)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature COCATION: (556)..(558)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

LOCATION: (44)...(46)
OTHER INFORMATION: n is a, c, g, or t

Sequence 237674, Application US/11266748A Publication No. US20060134663A1 GENERAL INFORMATION: APPLICANT: Harkin, Paul APPLICANT: Johnston, Patrick APPLICANT: Wulligan, Karl

RESULT 7 US-11-266-748A-237674/c FEATURE: NAME/KEY: misc_feature

ģ

LOCATION: (42)..(42) OTHER INFORMATION: n is a,

NAME/KEY: misc_feature LOCATION: (42)..(42) 占

ບັ

OTHER INFORMATION: n is a,

```
NAME/KEY: misc feature
LOCATION: (189)...(189)
OTHER INFORMATION: n is a, c, g, or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or
                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                    ö
                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or
                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
NAME/KEY: misc feature
LOCATION: (144)...(144)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: misc_feature
LOCATION: (96)..(96)
OTHER_INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/EXT misc feature
LOCATION: (117). (117)
OTHER INFORMATION: n is a, c, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ຫ້
                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (105)..(105)
JTHER INFORMATION: n is a, c, g,
                   ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o,
o
                                                                                      ກັ
                                                                                                                                                        တ်
                                                                                                                                                                                                                                                                                            ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
NAME/KEY: misc_feature
LOCATION: (167)...(167)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
NAME/KEX: misc_feature
LOCATION: (1.74)..(1.74)
OTHER INFORMATION: n is a, c,
                                                                                                                NAME/KEY: misc_feature
LOCATION: (66)..(69)
OTHER INFORMATION: n is a, c,
LOCATION: (48)..(50)
OTHER INFORMATION: n is a, c,
                              FEATURE:
NAME/KEY: misc feature
LOCATION: (55) . (55) OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                       NAME/KEY: misc_feature
LOCATION: (93)...(93)
THER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
NAME/KEY: misc_feature
LOCATION: (127)..(127)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FALLONEY misc feature
LOCATION: (149)..(150)
OTHER INFORMATION: n is a,
                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (84)...(85)
THER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY: misc feature
LOCATION: (122)..(122)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc feature
LOCATION: (132)..(132)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (136)..(137)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature
LOCATION: (179)..(179)
OTHER INFORMATION: n is a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature LOCATION: (195)..(195)
```

Gaps RESULT 8
US-11-218-305-5916/C
; Sequence 5916, Application US/11218305
; Publication No. US20060141495A1
; GENERAL INFORMATION:
; APPLICANT: MONSANYO TECHNOLOGY, LLC
; APPLICANT: MonSANYO TECHNOLOGY, LLC
; APPLICANT: Mo. Kunsheng
; TITLE OF INVENTION: POlymorphic Markers and Methods of Genotyping
; TITLE OF INVENTION: Corn.
; TITLE OF INVENTION: Corn.
; TITLE OF INVENTION: Corn.
; CURRENT APPLICATION NUMBER: US/11/218,305
; CURRENT PILING DATE: 2005-09-01
; PRIOR APPLICATION NUMBER: US 60/606,880 ; 0 Query Match
1.1%; Score 35; DB 8; Length 601;
Best Local Similarity 100.0%; Pred. No. 2.2e-07;
Matches 35; Conservative 0; Mismatches 0; Indels 1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 1442 527 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGATITI 493 NAME/KEY: misc feature
LOCATION: (273)
LOCATION: (273)
LOCATION: (273)
LOCATION: (334)
NAME/KEY: misc feature
LOCATION: (334)
OTHER INFORMATION: n is a, c, g, or t
FRATURE:
NAME/KEY: misc feature
LOCATION: (358). (368)
OTHER INFORMATION: n is a, c, g, or t or ö ö or or ģ ο΄ ο ຫ້ ϋ NAME/KEY: misc feature LOCATION: (238)..(238) OTHER INFORMATION: n is a, c, NAME/KEY: misc feature LOCATION: (210)..(210) OTHER INFORMATION: n is a, NAME/KEY: misc feature LOCATION: (213)..(213) OTHER INFORMATION: n is a, FEATURE: misc feature LOCATION: (234)...(234) OTHER INFORMATION: n is a, NAME/KEY: misc feature LOCATION: (251)..(251) OTHER INFORMATION: n is a, NAME/KEY: misc feature LOCATION: (268)...(268) OTHER INFORMATION: n is a, FEATURE:
NAME/KEY: misc feature
LOCATION: (204)...(204)
OTHER INFORMATION: n is a, NAME/KEY: misc feature LOCATION: (202)..(202) OTHER INFORMATION: n is FEATURE: NAME/KEY: misc feature LOCATION: (381)..(381) g ò

; 0 us-10-702-319a-113.olig.rnpbn

```
RESULT 12
US-10-612-783-3402/c
ORGANISM: Oryza
                                                                                      US-10-449-902-18409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-449-902-24951
                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                             а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 18409, Application US/10449902
; Publication No. US20060123505A1
; Fublication No. US20060123505A1
; GENERAL INFORMATION:
; APPLICANT: National Institute of Agrobiological Sciences.
; APPLICANT: The Institute of Physical and Chemical Research.
; APPLICANT: Foundation for Advancement of International Science.
; APPLICANT: Foundation for Advancement of International Science.
; TITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF
; FILE REFERENCE: MOA-A020511-08
; FILE REPERENCE: MOA-A02051-08
; CURRENT APPLICATION NUMBER: US/10/449,902
; CURRENT FILING DATE: 2003-05-29
; PRIOR FILING DATE: 2002-05-30
; PRIOR FILING DATE: 2002-05-30
; PRIOR FILING DATE: 2002-12-11
; NUMBER OF SEQ ID NOS: 56791
; SOFTWARE PLANTIN VET. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 11276, Application US/11218305
; Sequence 11276, Application US/11218305
; Publication No. US20060141495A1
; GENERAL INFORMATION:
; APPLICANT: MORANTON:
; APPLICANT: MCLAITG, Paul L.
; APPLICANT: Tao, Nengbing
; APPLICANT: Wu, Kunsheng
; TITLE OF INVENTION: Polymorphic Markers and Methods of Genotyping
; TITLE OF INVENTION: Corn.
; FILE REFERENCE: 38-21 (5566)B
; CURRENT FILING DATE: 2005-09-01
; PRIOR APPLICATION NUMBER: US/11/218,305
; CURRENT FILING DATE: 2004-09-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                  Length 1148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1413;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1375 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 1341
                                                                                                                                                                                                                                                                                    1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 1442
                                                                                                                                                                                                                                                                                                                            Score 35; DB 9; I
Pred. No. 2.2e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.1%; Score 35; DB 9; I
100.0%; Pred. No. 2.2e-07;
iive 0; Mismatches 0;
                                                                                                                                                                                1.1%; Scc. 100.0%; Pred. No. - 0, Mismatches
                      NUMBER OF SEQ ID NOS: 25043
SOFTWARE: Patentin version 3.2
SEQ ID NO 5916
LENGTH: 1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 25043
SOFTWARE: PatentIn version 3.2
  PRIOR FILING DATE: 2004-09-01
                                                                                                                                                                                Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 100. Matches 35; Conservative
                                                                                                          ; TYPE: DNA
; ORGANISM: Zea mays
US-11-218-305-5916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TYPE: DNA
; ORGANISM: Zea mays
US-11-218-305-11276
                                                                                                                                                                                                                                                                                                                                                                                                                     US-11-218-305-11276/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-449-902-18409/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 18409
LENGTH: 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 11276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
```

```
Sequence 3402, Application US/10612783

Sequence 3402, Application US/10612783

Publication Wo. US20060236419A1

SEQUENCE 3402, Application US/10612783

APPLICANT: Royalic, David K.

APPLICANT: Royalic, David K.

APPLICANT: Cao, Yongwei

TITLE OF INVENTION: Plants

TITLE OF INVENTION: Plants

FILE REFERENCE: 38-21(53373) A

CURRENT APPLICATION NUMBER: US/10/612,783

CURRENT FILING DATE: 2003-07-02

NUMBER OF SEQ ID NOS: 7098

SEQ ID NO 3402

LENGTH: 2411
                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 24951, Application US/10449902

| Sequence 24951, Application US/10449902
| Publication No. US20060123505A1
| Publication No. US20060123505A1
| GENERAL INFORMATION:
| APPLICANT: National Institute of Agrobiological Sciences.
| APPLICANT: The Institute of Physical and Chemical Research.
| APPLICANT: The Institute of Physical and Chemical Research.
| APPLICANT: Foundation for Advancement of International Science.
| TITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF
| TITLE OF INVENTION WINBER: US/10/449,902
| CURRENT FILING DATE: 2003-05-29
| PRIOR FILING DATE: 2003-05-30
| PRIOR FILING DATE: 2002-05-30
| PRIOR FILING DATE: 2002-05-30
| PRIOR FILING DATE: 2002-12-11
| NUMBER OF SEQ ID NOS: 56791
| SEQ ID NO 24591
| LENGTH: 2168
                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                  1.1%; Score 35; DB 6; Length 2002;
100.0%; Pred. No. 2.2e-07;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 2168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                       1406 ACGAGAGAGAGAGAGAGAGAGAGAGAGAGTT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1406 ACGAGAGAGAGAGAGAGAGAGAGAGAGAGTT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE: OTHER INFORMATION: Clone ID: PAT_MRT4530_75440C.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
1.1%; Score 35; DB 6; L
Best Local Similarity 100.0%; Pred. No. 2.2e-07;
Matches 35; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                    54 ACGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGTT 20
PUBLICATION INFORMATION:
DATABASE ACCESSION NUMBER: AK068805
DATABASE ENTRY DATE: 2001-12-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBLICATION INFORMATION:
DATABASE ACCESSION NUMBER: AK100393
DATABASE ENTRY DATE: 2002-08-28
                                                                                                                                  Query Match 1.1%
Best Local Similarity 100.0
Matches 35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: Oryza sativa
```

ö

Gaps

ö

0; Indels

Length 215126;

```
Query Match
1.1%; Score 35; DB 6; Lr
Best Local Similarity 100.0%; Pred. No. 2.5e-07;
Matches 35; Conservative 0; Mismatches 0;
                          SOFTWARE: FastSEQ for Windows Version 4.0
                                                ; SEQ ID NO 339
; LENGTH: 215126
; TYPE: DNA
; ORGANISM: Mus musculus
; FEATURE:
; NAME/KEY: misc feature
; LOCATION: (1)...(215126)
; OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-449-902-10915/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-449-902-10915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 120502;
                                                                       Query Match
Best Local Similarity 100.0%; Pred. No. 2.2e-07;
Matches 35; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 339, Application US/10540898
Publication No. US20060166213A1
GENERAL INFORMATION:
APPLICANT: David W. Morris
APPLICANT: Marc Malandro
TITLE OF INVENTION: Novel Compositions and Methods in Cancer
FILE REFERENCE: CHIR0056-101 (PP023367.0003)
CURRENT APPLICATION NUMBER: US/10/540,898
CURRENT FILING DATE: 2005-06-27
PRIOR APPLICATION NUMBER: US 10/330,773
PRIOR APPLICATION NUMBER: US 10/330,773
NUMBER OF SEQ ID NOS: 981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: MOTALIAN:
APPLICANT: MAIANDOM MATC S.
TITLE OF INVENTION: NOVEL THERAPEUTIC TARGETS IN CANCER
FILE REFERENCE: 20366-066001
CURRENT APPLICATION NUMBER: US/10/669,920
CURRENT APPLICATION NUMBER: US 10/004,113
PRIOR FILING DATE: 2001-10-23
PRIOR FILING DATE: 2001-11-08
PRIOR FILING DATE: 2001-11-08
PRIOR FILING DATE: 2001-11-08
PRIOR FILING DATE: 2001-11-08
PRIOR FILING DATE: 2001-11-09
PRIOR FILING DATE: 2001-11-09
PRIOR FILING DATE: 2001-11-09
PRIOR FILING DATE: 2001-11-09
PRIOR FILING DATE: 2001-11-09
PRIOR FILING DATE: 2001-12-20
PRIOR PLICATION NUMBER: US 10/085,117
PRIOR FILING DATE: 2002-02-7
PRIOR FILING DATE: 2002-03-01
PRIOR FILING DATE: 2002-03-01
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
PRIOR FILING DATE: 2002-12-17
                                                                                                                                                                                                                  1406 ACGAGAGAGAGAGAGAGAGAGAGAGAGAGTT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13904 CGAGAGAGAGAGAGAGAGAGAGAGAGTTT 13870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1407 CGAGAGAGAGAGAGAGAGAGAGAGAGAGTTT 1441
                                                                                                                                                                                                                                                                       Query Match 1.1%; Score 35; DB 6; I
Best Local Similarity 100.0%; Pred. No. 2.5e-07;
Matches 35; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 321, Application US/10669920
Publication No. US20060194265Al
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        , LOCATION: (1) ... (120502)
, OTHER INFORMATION: n = A,T,C or G
US-10-669-920-321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-669-920-321/c
US-10-612-783-3402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-540-898-339/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
ö
                                                                                                                                                                                                                                                                      APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: The Institute of Physical and Chemical Research.
TITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF
FILE REFERENCE: MOA-AO205YI-US
CURRENT APPLICATION NUMBER: US/10/449,902
CURRENT FILING DATE: 2003-05-29
PRIOR FILING DATE: 2003-05-29
PRIOR APPLICATION NUMBER: UP 2002-2038870
PRIOR FILING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
SEQ ID NO 10915
LENGTH: S84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 584;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                   87670 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 87636
1408 GAGAGAGAGAGAGAGAGAGAGAGAGAGAGTTTT 1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
1.1%; Score 34; DB 6; Le Best Local Similarity 100.0%; Pred. No. 7.2e-07; Matches 34; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1405 CACGAGAGAGAGAGAGAGAGAGAGAGAGAG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search completed: November 1, 2006, 13:45:00 Job time : 740 secs
                                                                                                                                                                                                 Sequence 10915, Application US/10449902
Publication No. US20060123505A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Oryza sativa
PUBLICATION INFORMATION:
DATABASE ACCESSION NUMBER: AK108263
DATABASE ENTRY DATE: 2002-08-28
```